



E-CONTROL

Annual Report 2005

The cover features a dark blue vertical bar on the left side. The main area is a light blue background with a complex pattern of overlapping, semi-transparent circles in various shades of blue, teal, and green. The text 'Annual Report 2005' is centered in white, with 'Annual Report' in a smaller font and '2005' in a larger font.

Annual Report 2005

→ Editorial

Published by: Energie-Control GmbH, Rudolfsplatz 13a, A-1010 Vienna
Tel. +43 (0)1 247 24-0; fax +43 (0)1 247 24-900; e-mail office@e-control.at

Editorial responsibility: Walter Boltz, Chief Executive, Energie-Control GmbH
Contents: Energie-Control GmbH
Graphic design and layout: **[cdc]** Viriotgasse 4, A-1090 Vienna, www.designconsult.com
Pictures: E-Control, [cdc]
Print: Stiepan Druck GmbH
© Energie-Control GmbH 2006

This publication is copyright protected. All rights reserved, including those to translation, performance, use of illustrations and tables, broadcasting, microfilming or reproduction by other means, or electronic storage of all material contained herein.



Martin Bartenstein
Federal Minister of Economic Affairs
and Labour

The past year was an exciting one for the Austrian and European energy sectors. In 2005 the European Commission carried out an in-depth investigation of the European electricity and gas markets, including those of Austria. This sector inquiry was launched during the summer, and the preliminary findings were published in the autumn, at the same time as the fifth benchmarking report. The European Commission has found that although the legal conditions for functioning internal electricity and gas markets have been created at EU level, both the integration of national markets and cross-border competition remain inadequate. There is, then, still much to be done before all consumers profit fully from electricity and gas market liberalisation. Austria will therefore do all in its power to support the Commission in its efforts to create genuine internal markets in electricity and natural gas during its presidency of the European Union.

2006 will be no less stimulating. Apart from maximisation of the benefits of liberalisation, security of supply will again be to the fore, as events in the gas sector starkly demonstrated at the start of 2006. Austria has therefore made energy supply security one of the central issues to be addressed by its presidency.

Energie-Control GmbH (E-Control) is responsible for regulatory oversight of the liberalised electricity and gas markets in Austria. Apart from its regulatory role, E-Control also has a service function in that it stands ready to answer consumers' questions on the free energy market.

I should like to take this opportunity of expressing my gratitude to the chief executive of E-Control, Walter Boltz and his staff, and the hope that they will represent the interests of energy consumers with undiminished vigour in 2006.

Martin Bartenstein



Walter Boltz
Chief Executive Officer
Energie Control GmbH

2005 was a very busy year for the entire energy sector, and brought some extremely encouraging progress for energy consumers. For instance, after several months of intensive negotiations with system operators we succeeded in laying the groundwork for a lasting regulatory mechanism for the determination of electricity system charges. This will be based on the “incentive regulation” method. On 1 January 2006 this system, which has already shown its worth in a number of countries, replaced the previous annual tariff review procedure; it will ensure that a fair approach is taken to tariff determination in future. The scheme will bring a further convergence of Austrian system charges with international levels, whilst rewarding system operators for productivity gains. All electricity consumers will benefit, as the system charges will once again fall.

Without the spirit of cooperation shown by the industry it would not have been possible to introduce this system in Austria, and I should like to take this opportunity of thanking those concerned.

However, we cannot afford to rest on our laurels. In 2005 the European Commission initiated a Europe-wide inquiry into the electricity and gas markets, and the final report

is expected to appear towards the end of this year. The preliminary findings show that the implementation of the relevant EU directives still leaves a lot to be desired. Transposition of the directives is essential if consumers across Europe are to enjoy the advantages of energy market deregulation. Liberalisation has been a success in Austria, but there are still significant weaknesses that need to be overcome. For example, the investigation of the Austrian electricity market carried out by the Federal Competition Authority in cooperation with E-Control in 2005 established that the market power of the incumbents still stands in the way of functioning competition. Naturally, the Commission’s analysis is not focusing on the problems of individual countries, but takes a pan-European perspective. However it will undoubtedly highlight problems at national level, and not only E-Control but the entire Austrian energy sector will need to pay close attention to it in 2006. In short, the coming year will present further exciting challenges!

This foreword gives me an opportunity to thank all our partners for the commitment shown during the year just ended. I look forward to their continued close cooperation in 2006.

Walter Boltz



Walter Barfuß
Director-General of the Federal
Competition Authority and
Chairman of the Supervisory Board
of Energie Control GmbH

E-Control (since September 2002 “Energie-Control Österreichische Gesellschaft für die Regulierung in der Elektrizitäts- und Erdgaswirtschaft mit beschränkter Haftung”) was founded on 23 February 2001, and this is its fifth annual report.

It is certainly one to be proud of. In particular, it shows that an active and successful sector regulator (in this case, responsible for the liberalised electricity and gas markets in Austria) can no more be “everybody’s darling” than an overall competition authority. A regulator must perform its often difficult duties – ordained by Community and national law, and its articles of association – unflinchingly, though of course without losing the necessary sense of proportion. This comes with the job, as it were.

As this report makes clear, in the year under review E-Control’s duties went beyond its supervisory responsibilities and the reports and recommendations that it is required by law to make, and increasingly extended to activities at European level. As is well known, the European Commission has been paying very close attention to the Community gas and electricity markets for some time now. Member states must work together to attain the goal of a harmonised internal market.

Here in Austria, efforts in this direction are being channelled not just through formal industry investigations by the Federal Competition Authority (in conjunction with E-Control), but are also through a variety of regulatory procedures and actions carried out by E-Control, and in particular the search for consensual arrangements (e.g. those aimed at stimulating competition).

E-Control strives to strike a balance between the – very different – interests of market participants and chart a regulatory course that will meet with the widest possible acceptance. As Chairman of the E-Control Supervisory Board I should like to compliment the Chief Executive and his team on their good judgment during the year under review, and their excellent performance. The working relationship with the supervisory board, which takes a close interest in management’s actions and frequently requests information, has been excellent, and the same applies to cooperation with the Federal Competition Authority. As the Director-General of the Federal Competition Authority and Chairman of E-Control’s Supervisory Board, I should like to express my gratitude to the Chief Executive and his team for this on behalf of the entire Board.

Walter Barfuß



Foreword	5
-----------------	----------

INTRODUCTION

Introduction – Highlights of 2005	11
--	-----------

European developments	12
General investigations of the electricity and gas industries	16
Incentive regulation	25

Electricity

The electricity market in 2005	37
---------------------------------------	-----------

Developments on the Austrian electricity market	38
Green power	40
Wholesale prices	43
Electricity-price comparisons	45

Activities of the regulatory authority: electricity	47
--	-----------

Network regulation: electricity-tariff determination	47
Creation of regulatory frameworks	52
Monitoring and market-oversight functions	53
Statistical activities	54
Activities under the Energy Emergency Powers Act 1982	55
Austrian failure and outage statistics for 2004	55
Studies and reports	57
Long-term forecast	66
Stranded costs	67

GAS

Developments on the gas market 69

Developments on the Austrian gas market	70
Import-price trends	71
Retail prices	72

Activities of the regulatory authority: gas 76

Network regulation: gas-tariff determination	76
Creation of regulatory frameworks	78
Monitoring and supervisory functions	82
Statistical activities	90
Studies	90

RESPONSIBILITIES COMMON TO ELECTRICITY AND GAS

Consumer activities 96

Arbitration panel – Taking stock after three years	96
Prevention of market abuse	96
Public-information activities	97

International cooperation between regulatory authorities 99

Participation in CEER and ERGEG	99
Florence (electricity) and Madrid (gas) Processes	101

Market timeline – Gas and electricity 102

Annex 109

Orders and notices	109
List of illustrations	111



Introduction –
Highlights of 2005



→ European developments

Regulation at Community level

The outstanding development of 2005 at European level was the electricity and gas sector inquiries. Energy prices continued to rise in 2005. The year also saw the adoption and publication of what was probably the last item of legislation in the second liberalisation package – the Regulation on conditions for access to the gas transmission networks (2005/1775/EC). The fact that though the legal conditions have been created for internal electricity and gas markets consumers are highly dissatisfied with the way they are currently working has led the Commission to find relatively harsh words for the existing shortcomings in the preliminary findings of two inquiries.

A recurrent theme of these reports is the recognition that market opening is not a self-generating process. Because of the high level of market concentration and inadequate unbundling of infrastructure (transmission, distribution and, in the gas sector, storage) from competitive areas of business, the activities of market participants themselves are hardly likely to create any momentum for change, and this must be supported, if not imposed by regulation and competition oversight. In line with this conclusion, the Commission continues to regard the role of the regulatory authorities as particularly crucial.

The fact that developments at national level have so far seldom led to a reduction in market concentration, and that mergers have actually increased it, has prompted the Commission and the European regulators to launch a “regional markets initiative”. This centres on decreasing market concentration by largely integrating national markets, as a result of which it is hoped that the large companies will lose much of their control over price formation. ERGEG¹ has responded by holding public consultations

on “road maps” for competitive single electricity and gas markets, during which the core elements of integrated markets have been discussed. In operational terms, ERGEG proposes the use of case studies to work out plans for implementing regional markets. It has pointed to the central role of member states’ governments, which must provide political support if the process is to succeed. If it proves impossible to create regional markets there will be no alternative to tougher national action aimed at achieving an acceptable level of competition, at least on the wholesale market.

The European Commission’s benchmarking report and sector inquiry

The various EU directives impose numerous notification and reporting duties on the European regulators. In order to simplify this process, agreement has been reached with the European Commission on a single annual submission date for all reports, regardless of the requirements of the respective directives. The “progress report” (identical with the fifth benchmarking report), prepared by the Commission on the basis of submissions received from regulators and its own research, therefore covers all the issues addressed by the Electricity and Gas Directives.

During the summer of 2005 a Europe-wide sector inquiry into the electricity and gas markets was also launched. The preliminary findings were published at the same time as the benchmarking report.

The Commission will publish a final report on the implementation of the Electricity and Gas Directives by member states before the end of 2006. It is therefore likely that infringement procedures will be opened against member states that fail to meet the requirements of the directives by autumn 2006. The report will also discuss further action needed to advance the liberalisation process.

¹ European Energy Regulators Group for Electricity and Gas; ERGEG is an advisory group formed to assist the European Commission. Its membership consists of the regulatory authorities of EU member states. For further information visit www.ereg.org/.

The final report of the sector inquiry, which will contain detailed analyses of the wholesale markets, is due to appear towards the end of 2006.

Findings

General

Inadequate implementation of the directives by member states is criticised in no uncertain terms. Although many of the measures in the acceleration package should have been transposed by mid-2004, few member states met this deadline. The non-existent or deficient implementation of the unbundling requirements by many countries is singled out for particular criticism. Attention is also drawn to the insufficient powers of regulators. The Commission complains that many member states have failed to make serious efforts to implement the directives. In particular, the functional unbundling of network operators has only been carried out in a few countries. This has consequences for the non-discriminatory treatment of market participants. The Commission finds that integrated companies' subsidiaries have privileged access to market information as compared to alternative suppliers. While the independence of transmission system operators is essential for a functioning wholesale market, success on the retail market depends on the behaviour of the distribution system operators.

Network congestion and/or differences in market design are preventing price comparisons between markets, the Commission says. There are no signs of any improvement in congestion. The objective, adopted in Barcelona, of inter-connection capacity in all member states equal to at least 10% of their national energy demand, has yet to be fulfilled. Transmission system operators appear to be lacking in independence, as reluctance to expose affiliates to increased competition is evidently continuing to prevent them investing.

Retail competition appears to be relatively intense where large consumers are concerned. However, few small consumers are switching suppliers, and this points to a lack of competition – and opportunities for it. Moreover, in some cases regulated prices set below market levels distort competition by keeping entrants out, whilst giving the false impression that regulated energy prices are more advantageous to consumers than those that would be formed by a functioning competitive market.

Gas market

An aspect of the poor functioning of European energy markets is the persistence of separate national markets; the goal of a single European internal market has not been attained.

This is shown by the fact that the exports of almost all of the large gas companies represent less than 10% of their sales, though gas must normally cross several borders before reaching its destination. Long-term transport contracts separate national markets from one another, meaning that it is very difficult to buy gas in one country and then ship it to another. Likewise, only the incumbents are making any use of the theoretical possibility of swaps as a means of avoiding the physical transportation of gas.

Cross-border transport is further impeded by the fact that in some cases transmission system operators do not allocate primary capacity in a non-discriminatory manner, owing to inadequate unbundling and by lack of transparency with regard to capacity, meaning that it is impossible to obtain information about physical availabilities.

Since import and production capacity on national markets is in the hands of a very small number of companies, market dominance is the rule at this stage of the supply chain. Moreover, market entry is virtually impossible for small companies

and for some final consumers (including large ones), because their uptake is insufficient for import contracts of their own. Long-term contracts often extend this dominance of imports to further stages of the supply chain, thereby also impeding market entry there.

Beyond these supply relationships, in which long-term contracts predominate, there are few liquid marketplaces. The flexibility of the import contracts enables the importers to reduce their uptake from the exporters instead of offering surplus amounts on the European market. Indeed, only about 40% of the agreed flexibility is being exploited at present, meaning that the importers have little incentive to engage in short-term spot trading. One of the preconditions of liquid markets – namely, the existence of participants with surplus gas and of others with a need for it – is thus not met. It is disquieting that liquid markets are against the interests of both the large importers and the exporters, as they would threaten the current netback pricing system.

Only in Belgium and the United Kingdom have reasonably liquid markets where large numbers of contracts with relatively short terms grown up, due to high British gas production and LNG imports. The large European companies also dominate the marketplaces.

To operate on the retail markets, supply flexibility is essential. However, newcomers obtain little access to the storage market in general, and short-term flexibility tools are at a premium. This is a particular disadvantage for entrants in countries where balancing energy prices are relatively high.

The structure of the long-term contracts, which carries through to retail markets, results in most retailers' having the same upstream suppliers, further obstructing competition between them. Even at national level, competition is muted,

meaning that retail markets are mostly sub-national in scope. Incumbents usually only bother to start developing neighbouring markets if they lose market shares in their traditional territories.

An aspect of the gas sector that has long attracted criticism is the close linkage of gas to oil prices. Less than 15% of the gas imported into Europe is not tied to oil prices. It is striking that the indexation is mostly passed on to retailers, enabling the price risk to be fully transferred to final consumers, obviating the need for hedging.

Electricity market

The Commission likewise finds that most electricity markets are still national in scope. Here, too, the goal of a single European internal market has not yet been attained.

One of the main reasons for the fragmentation of Europe's markets is inadequate physical interconnections between them. It is easy to demonstrate that the main price differentials in wholesale market reflect network congestion. The Commission puts most of the blame for the lack of interconnector capacity on inadequate unbundling.

However, inefficient allocation of this tight capacity also plays a part in markets' remaining separate. Long-term capacity allocation precludes short-term adjustment of trade flows to arbitrage.

Even where sufficient interconnector capacity is present, incompatible market design or even minor details stand in the way of efficient trade. The shorter the distances involved in physical delivery, the harder it is to obtain power by way of cross-border exchanges. Due to the combined effect of these factors cross-border trade has only grown from 7% to 10.7% of total electricity consumption over the past decade (1995–2005).

Although the main national electricity markets are far less concentrated, large generators with shares of at least 30% are active on them. While surplus capacity does normally exist, the prevailing vertical integration of generators and suppliers significantly restricts the liquidity of the wholesale markets. This can touch off a vicious cycle of growing risk, leading to the need for further vertical integration.

Market risk is also increased by lack of transparency. Large generators have better market intelligence than their smaller counterparts, making it easier for them to predict price movements. This makes electricity procurement more risky, and creates an incentive for suppliers to build up generating capacity of their own or to lock in prices by means of long-term contracts.

As with the gas industry, some electricity retail markets do not even extend as far as national borders. The low switching rates exhibited by small and medium consumers, despite wide price differentials, pay witness to the dominance of local suppliers.

Summary

The preliminary findings of the sector inquiry and the benchmarking report indicate the priorities for action to stimulate competition in the electricity and gas markets. They present a similar picture to the Austrian investigations of the electricity and gas markets. These, too, have concluded that inadequate unbundling and high market concentration levels are preventing competition from emerging. Some of the problems highlighted by the Austrian studies were also raised at European level, and are likely to remain a focus of debate. The Commission will be proposing specific remedies in the course of 2006. For such European measures to achieve lasting success it will be essential to remove impediments to competition at national level.

Identifying these obstacles is the purpose of the investigations of the Austrian electricity and gas industries.

South-eastern Europe

The south-east Europe process was set in motion by the signature of the Memorandum of Understanding on the Regional Electricity Market in south-east Europe and its Integration into the European Union Internal Electricity Market by the Athens Memorandum of 15 November 2002, and formalised by a legally binding treaty between the European Community and nine contracting parties² in the region (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, the former Yugoslav Republic of Macedonia, Montenegro, Romania, Serbia and the United Nations Interim Administration Mission in Kosovo). The signature of the Energy Community Treaty (ECT) on 25 October 2005 created a legal framework for an integrated energy market. This process centres on efforts to promote and sustain economic development in south-eastern Europe. It is aimed at facilitating energy trade between the countries of the region, and ultimately, between the region and the EU.

A strong commitment by the countries of the region to market reforms will be needed in order to: improve energy efficiency; reduce energy intensity as compared to international standards; strengthen national institutional capabilities, and adapt legislation and regulation to EU norms and practices. In the past few years major advances have been made towards achieving these objectives. The partnership agreements with the EU, aimed at safeguarding peace in the Balkans, have laid the groundwork for closer relations between the region and the European Union.

The medium-term objective of the initiative is to create a regional electricity market, and subsequently to integrate this in the internal

² Negotiations with EU candidate Turkey regarding membership of the Energy Community Treaty (ECT) at a later stage are currently under way.

market. The long-term goal is to connect the markets of all the countries concerned to the west European network, and thus optimise cross-border energy – and especially electricity – exchanges, and link consuming and resource-rich countries more closely.

Since the inception of this process, E-Control has played a key role in the relevant CEER working group, and we are now involved in mapping out a workable market design that will approximate as closely as possible to the best practice rules of the EU-25. We plan to participate in the Regulatory Board in 2006. In order to carry these efforts forward effectively, Austria and its partners – EU member states Greece, Hungary, Italy and Slovenia – will strive for consensus on the measures to be taken by the ECT members (the so-called “Title III decisions”), thereby reflecting Austria’s special position.

Until the ECT enters into force upon its ratification by six countries, the secretariat established in Vienna towards the end of 2005 will be responsible for overall coordination of the process³ on an interim basis; it will be replaced by a successor organisation in 2007.

Energy Community Secretariat (ECS)

The Energy Community Treaty provides for the establishment of a Vienna-based secretariat. An interim Energy Community Secretariat was set up as a non-profit organisation, in the second quarter of 2005, to fulfil these functions until the treaty enters into force. The selection procedures for the total of nine staff, to work under a director appointed by the European Commission, were completed before the end of 2005.

The tasks of the secretariat will be to:

- Provide administrative support to the Ministerial Council, the Permanent High Level Group, the Regulatory Board and the fora;
- Review the proper implementation by the parties of their obligations under the treaty, and submit yearly progress reports to the Ministerial Council;
- Review and assist in the coordination by the European Commission of the donors’ activity in the territories of the adhering parties;
- Carry out other tasks conferred on it under the treaty.

→ General investigations of the electricity and gas industries

Investigation of the Austrian electricity industry

During the autumn of 2004, announced and in part implemented electricity tariff increases for the mass and large consumer markets, and the possibility of further price rises in coming years, led to heated public discussion of the competitive situation on the Austrian electricity market. In September 2004 this prompted the Minister of Economic Affairs and Labour to suggest to the Federal Competition Authority that it undertake a general investigation of the Austrian electricity industry under section 2(1)(3) Competition Act (industry investigation) in close cooperation with E-Control. The Federal Competition Authority and E-Control took up this suggestion and initiated a joint investigation, also drawing on the assistance of the Federal Cartel Prosecutor.

³ See www.energy-community.org

Procedure

In the course of the general investigation of the electricity industry, E-Control assisted the Federal Competition Authority with its extensive research. At the outset of the investigation questionnaires aimed at various groups of players in the industry were prepared and distributed to almost 800 market participants.

On the consumer side, both industrial and medium-sized enterprise consumers were asked about their experiences with actual or attempted supplier transfers and about electricity price trends. In addition, the medium-sized enterprise consumers were asked about the electricity companies' terms and conditions (especially minimum terms and agreements based on all-inclusive prices). The consumers took a lively interest in the investigation, and this was reflected in their responses, some of which were lengthy and detailed.

The electricity companies were surveyed separately, according to their functions along the supply chain. Different forms of information were obtained from energy suppliers, system operators and electricity traders (including integrated electricity companies in their capacity as electricity traders). A total of 94 requests for information were sent to about 40 electricity companies, most of them integrated. General questions were put to potential domestic and international retailers without proprietary networks. They were mainly asked about their current activities on the Austrian market, as well as the obstacles to entry to the Austrian retail market.

Due to the scope and detail of the questionnaires, the Federal Competition Authority granted numerous extensions. In spite of this

the information provided was patchy. Several follow-up requests directed to companies deemed to be representative of the Austrian market failed to elicit a full set of data, but the information gathered was sufficient for market definition and the identification of companies with dominant positions.

Results and conclusions drawn

The consumers' responses were analysed during the first phase of the investigation. The results showed that every consumer group had experienced price increases, and that the suppliers had almost always justified these by reference to exchange quoted prices. The consumers' responses also yielded initial evidence for use in definition of the retail markets. The latter do not extend beyond Austria's national borders, and in the case of end-users with low demand they may only be regional in scope. The results were published in an interim report which appeared at the start of December 2004. The second phase of the industry investigation focused on retail market definition on the basis of the information supplied by Austrian electricity companies, and on the identification of dominant companies⁴.

Put in highly simplified terms, the test for market definition is whether a permanent price increase by a hypothetical monopolist in a given market would be profitable, or in other words, whether the additional contribution margin would more than compensate for any customers lost. The analysis was based on one qualitative and two quantitative methodologies. As a first step, consumer switching behaviour in response to price increases by incumbents ("local players"), and the effect on companies' gross margins – taken as an approximation of profits – were investigated. This revealed that during the

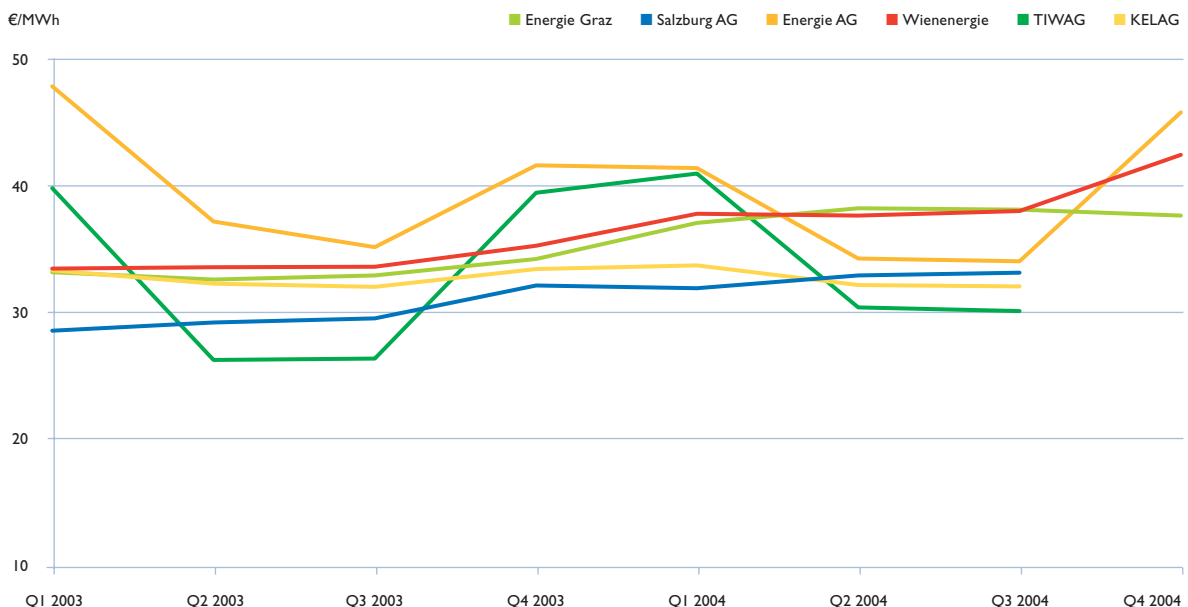
⁴ The first and second interim reports are posted on the website of the Federal Competition Authority (www.bwb.gvat).

observation period the increases in the energy prices charged by local players to households, small businesses and farms (Grid Level 7 consumers) – which resulted in price differentials vis-à-vis the lowest cost supplier of up to 30% – had indeed probably been profitable. An investigation of the behaviour of medium-sized enterprises (Grid Level 6 consumers), which were also very reluctant to take the opportunities open to them for significant savings (e.g. by joining electricity pools), brought similar but far less pronounced results. In order to ascertain whether price increases by local players have actually led to higher profits it was also necessary to take the power suppliers' costs into account. Here, it emerged that suppliers were able to pass on increases in procurement costs quickly without losing customers. However, some suppliers had negative margins, due to high transfer prices. In these cases the high procurement costs simply served to transfer profits within integrated companies. This

was the main reason why it was not possible to arrive at definite conclusions as to whether price increases were profitable for the suppliers in the sample. All in all, however, it appears that to all intents and purposes the local players can behave like monopolists inside their grid areas when setting their prices for residential, small business and agricultural consumers, and possibly also the medium-sized enterprises connected to Grid Level 6. These consumers' low and in some cases declining level of switching activity – despite some appreciable price differentials between local players and alternative suppliers – meant that the additional revenue gained from a price increase far outweighed the marginal losses from switching. Final consumers at Grid Levels 6 and 7 account for some 60% of total retail electricity sales in Austria. The mixed competitive situation in the mass retail market is also reflected in the differing price levels in the various grid areas (see Chart I).

→ Prices charged to medium-sized enterprises (Grid Level 6), by grid areas

Chart I



Source: E-Control

The picture with respect to medium and large-scale industrial consumers is very different. Here, too, switching rates were found to be low, but this was because the local player was often ultimately the lowest bidder in a tender. When addressing this customer segment the local players already appear to be reacting to competitors' bids, and are holding on to customers by improving their offers. The different competitive conditions in the case of large consumers and the changed pricing practices of local players are reflected in the relatively narrow differentials, viewed at national level, as compared to prices for small consumers (see Chart 2).

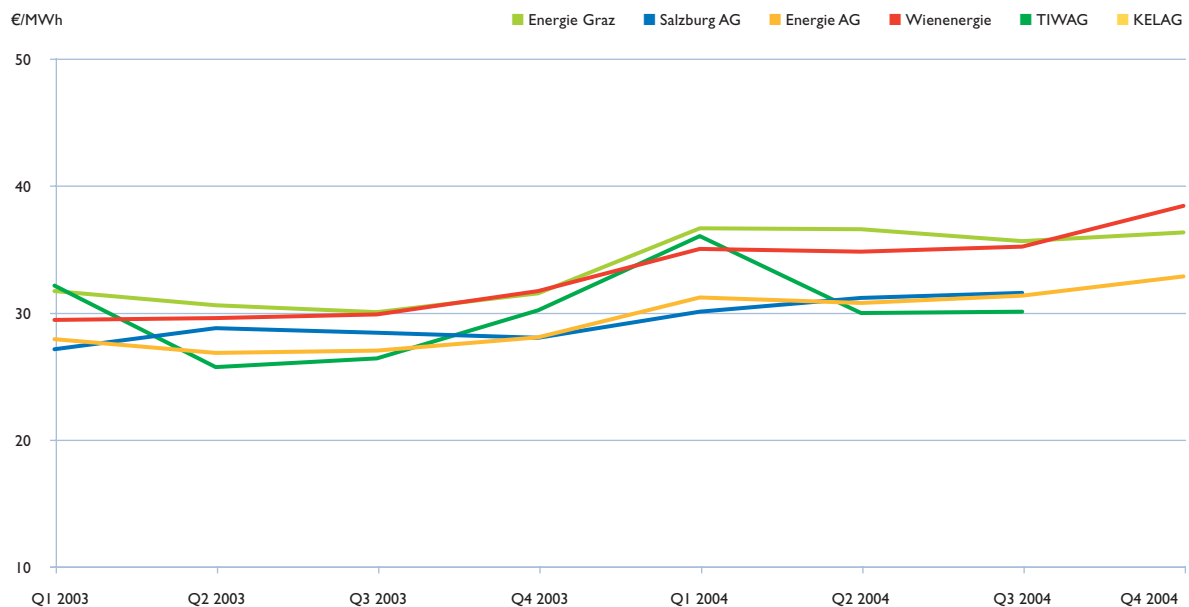
In a second step, the results of the analysis of switching after price increases were tested by looking at trade flows. This methodology takes account of the fact that information on prices, goods and supply and demand in different regions influences decisions on out-of-area sourcing.

The evolution of trade flows over time provides useful additional indications of the economic impact of supply-and-demand factors and the extent to which these constitute effective barriers to entry. Both alternative suppliers' aggregate deliveries within given grid areas and local players' out-of-area deliveries were found to be below the generally accepted thresholds for extension of the relevant geographic market beyond the grid area.

In a third step, a qualitative analysis of the entry barriers was undertaken to test market delineation. This showed that the barriers to entry to the mass market were considerably greater than those to the bespoke large consumer market. Both the switching costs an alternative supplier would have to bear to acquire customers and energy suppliers' marketing costs per kilowatt hour sold are much higher for small than for large consumers. Moreover, the disadvantages due to inadequate

→ Prices charged to industrial consumers (Grid Level 5), by grid areas

Chart 2



Source: E-Control

unbundling – particularly in combination with incumbents’ ability to charge low energy prices – limit alternative suppliers’ prospects of achieving positive contribution margins. The failure of the provinces to implement the unbundling provisions in the federal legislation is regrettable in view of their importance for the emergence of effective competition. Both qualitative and quantitative methods of investigation thus yield clear indications that the grid area is the relevant geographic market for consumers connected to Grid Level 7 – households, small businesses and farms – and, to a lesser extent, for Grid Level 6 consumers (medium-sized enterprises).

The subsequent calculations of market shares indicated that virtually all the large suppliers with their own grid areas, which were local players before liberalisation, hold dominant positions in the small-consumer market. Judging purely on the basis of market shares, there is one Austrian company with a dominant position on the large-consumer market.

The interim findings of the sector investigation – especially the continued narrow market boundaries in the small- and large-consumer market – show that, contrary to expectations at the time, the reduction in the number of competitors as a result of the formation of EnergieAllianz was by no means a temporary phenomenon. Instead of entering the Austrian market in increased numbers, suppliers have been withdrawing from it. Barriers to entry and the reluctance of consumers to switch mean that this situation is unlikely to change in the near future. EnergieAllianz thus continues to hold a dominant position in the retail market. When clearing the “Austrian electricity solution” the European Commission still anticipated rapid completion of the internal market. Current developments on the European electricity market cast doubt on the benefits of the “Austrian electricity solution” in competition terms.

Further action

The industry investigation also examined the extent to which dominant undertakings have a special responsibility not to impair competition. Both the Electricity Directive and the Austrian transposing legislation – the EIWOG (Electricity Industry and Organisation Act) – require Austrian electricity companies to play their part in the creation of functioning competitive markets. Moreover, settled ECJ competition case law points to the conclusion that dominant companies have special responsibilities, or in other words, that certain types of behaviour constitute abuse. In the electricity sector, these special responsibilities relate to contract formulation, and in Austria the following practices raise particular concerns:

- Opaque all-inclusive prices;
- Unreasonably long contract terms;
- Certain rebate schemes (loyalty rebates);
- Bundling and tying (multi-utility offers).

The fulfilment of dominant companies’ special responsibilities is being assessed on a case-by-case basis.

Companies have a general obligation to contribute to effective competition by formulating their offers and all customer information in a transparent manner.

At the same time the competition authorities are working with the industry to develop measures aimed at stimulating competition, which will be mandatory for electricity companies. These mainly relate to non-discriminatory treatment of suppliers by system operators, acceleration of the supplier transfer process, improved access to information and greater transparency for customers, a code of conduct for market participants and steps to reduce the impact of control area related market segmentation. There are also plans for ongoing monitoring of competition on the Austrian electricity market and compliance with agreed rules.

Investigation of the Austrian gas industry

Legal basis and procedure

Public discussion of the competitive situation on the Austrian gas market prompted a decision by the Federal Competition Authority in November 2004 to launch a general investigation of the Austrian gas industry under section 2(1)(3) Competition Act, parallel to the ongoing investigation of the electricity industry. This, too, was to be carried out in close cooperation with E-Control and to involve the Federal Cartel Prosecutor.

In the course of its investigation the Federal Competition Authority carried out a written survey at the end of December 2004 and the beginning of January 2005, and some 520 questionnaires were distributed with the assistance of E-Control. The periods covered by the survey were 2003 and 2004.

A total of almost 450 industrial and medium-sized enterprise consumers were asked in writing about their contracts (minimum agreement terms, use of all-inclusive pricing, price levels and price adjustment clauses), their experiences with actual or attempted supplier changes and gas price trends. Final consumers had particular difficulty in stating the net energy price they were paying, as those with all-inclusive price agreements were apparently unable to calculate it. Like electricity consumers, gas end-users showed lively interest in the investigation, and assisted the Federal Competition Authority and E-Control by providing extensive and detailed information.

The survey of gas companies was subdivided into supply chain stages.⁵ Producers and storage operators were excluded from it. System operators were only asked about switching rates. Gas merchants⁶ and suppliers⁷ were asked to provide

information on the procurement side of their business (amounts and prices, suppliers, tendering and procurement terms and conditions) and the supply side (sales volumes by product and geographical markets, the contractual terms, pricing policy and bidding practices applied). Apart from the incumbent gas companies, gas merchants registered with E-Control GmbH and domiciled in Austria were also included in the survey.

Due to the scope and detail of the questionnaires, the Federal Competition Authority granted numerous extensions. The information received was very thoroughly validated and analysed. The first interim report on the industry investigation was published in September 2005.

Results and conclusions drawn

The main focus of the first interim report was on product and geographic market definition as this is an essential step towards analysing competitive intensity. The methodology used was largely drawn from the Commission Notice on the definition of the relevant market for the purposes of Community competition law.⁸ In this the Commission stresses that the market definition methodology may lead to different results depending on the nature of the competition issue being examined. The investigation of the Austrian gas market employed a retrospective analysis of the market behaviour of suppliers and consumers since market opening in 2002. However, the analysis of barriers to entry to the various markets also permitted a prospective analysis of anticipated market developments and market definition.

It was possible to map out a supply chain on the basis of the survey data obtained. A number of different markets along the supply chain were defined, applying the demand substitutability concept. These are the markets for:

⁵ Some gas companies received several questionnaires because they operate at more than one functional level and as grid operators.

⁶ The Natural Gas (Amendment) Act (GWG II) defines a gas merchant as a natural person or legal entity who/which buys or sells gas and performs no transmission or distribution functions either inside or outside of the grid in which he/she/it operates (GWG II, section 6, Definitions, para. 10).

⁷ A gas supplier according to GWG II is a natural person or legal entity who/which supplies gas to resellers or final consumers (GWG II, section 6, Definitions, para. 12).

⁸ Commission Notice on the definition of the relevant market for the purposes of Community competition law, published in OJ No. C 372 on 09/12/1997, p. 5.

- First-level gas wholesaling (at international level);
- Second-level wholesaling (supply to large distributors and other second-level wholesalers);
- Supply to local distributors;
- Supply to large consumers (annual demand over 500,000 cu m);
- Supply to small consumers (annual demand up to 500,000 cu m).

Two further markets, access to which is essential for retailers, were also defined. These are the:

- Storage market, and
- Balancing market.

Conclusions were drawn from the survey results as to demand characteristics and purchasing behaviour (e.g. procurement from foreign companies, invitations to tender and preferential treatment of certain companies) in the respective markets thus defined. A trade-flow analysis provided additional evidence. This was supplemented by examination of the evolution of margins so as to determine whether suppliers are exposed to competitive pressures. After the market-definition exercise, the companies with market power in the markets in question were identified. The term “dominant company” is defined by the Cartel Act 1988 (KartG 1988 – Federal Act of 19 October 1988 on Cartels and other Restrictive Trade Practices) as follows: If an entrepreneur as supplier or demander in the entire domestic market or another relevant geographic market holds a share of at least 30%, then the onus is on it to prove that it is not dominant. This led to the finding that OMV Gas GmbH and its subsidiary EconGas GmbH hold dominant positions in almost all the markets served by

them. The incumbents (“local players”) likewise hold dominant positions in the small consumer segment. The local players’ networks (former supply areas) cannot be treated as a single control-area-wide market. However in the large-consumer segment there are indications of competitive pressure from suppliers outside the former supply areas, and this market should be seen as control-area wide.

The following issues were identified as major problems affecting competition, which require further examination in a final report:

- The role of long-term contracts as a barrier to entry;
- Access to gas wholesale markets;
- Access to transport capacity;
- Anticompetitive behaviour by incumbent suppliers.

Role of long-term contracts as a barrier to entry

OMV Gas GmbH has a dominant position in the market for supplies to provincial gas transmission companies under long-term contracts in the Eastern control area. This, together with the agreement terms of anything up to 20 years, which are customary, and the take-or-pay obligations, cements the existing market structure and results in foreclosure.

The problem of long-term supply contracts, most of which go back to pre-liberalisation days, is not restricted to Austria and is encountered throughout Europe. It is therefore a focus of the ongoing Commission energy sector inquiry. The German Federal Cartel Office has already condemned long-term agreements between the municipal utilities and the gas transmission companies as anticompetitive and resulting in foreclosure, and has instituted proceedings

against 15 gas transmission companies aimed at forcing changes in the contracts concerned. This initiative appears to have been at least partly successful, as there is apparently some readiness on the part of the German gas industry to limit the use of long-term agreements.

Since long-term contracts also represent a significant barrier to entry in Austria, the competition issues raised by them will require an assessment in the final report.

Access to gas wholesale markets

Apart from deliveries from wholesalers under long-term contracts, there is also some short-term gas trading, on a much smaller scale, for instance during the summer. This is not a formalised market at present, but access to it is critical to minimising procurement cost, as witnessed by the role of the short-term trading in other European second-level wholesale markets.

It has not so far been possible for all market participants to make great use of the opportunities offered by this market, though there is a demand for such products.

It is known from experience elsewhere in Europe that standardised short-term contracts cut transaction costs. A gas trading “hub” should therefore be established as a marketplace for short-term trades. The commitment given during the EconGas merger proceeding to mount a gas release programme (auctions) was intimately connected with plans for the future development of a functioning gas hub in Baumgarten. To date, Central European Gas Hub GmbH (CEGH), a wholly owned subsidiary of OMV Gas, has only been used to carry out the EconGas gas-release programme. This shows that steps towards creating a liquid

trading hub in Baumgarten have been extremely hesitant thus far. The obstacles to establishing a functioning gas hub need to be overcome, and rapid progress made. The final report will therefore examine further action required to promote the creation of a liquid short-term market.

Access to transport capacity

To be able to market gas in Austria, alternative suppliers need access to interconnector capacity. At present system access is on the basis of negotiated contracts and is not regulated.

Because of this no information is available as to how long-term rights to capacity on the transit systems are allocated or, in other words, who has access to which second-level wholesale markets (Germany, Italy, etc.). It is difficult for a newcomer to obtain access to transit systems. No firm capacity on any of the cross-border pipelines is currently reserved for new customers. Here, it should be noted that the existing long-term capacity reservations are often for affiliates of the system operators, and some are not matched by physical flows. Neither the offer of interruptible capacity nor transparent secondary trading in transport rights would be sufficient to enable a new supplier to enter the market. It is thus consistent with the European Commission’s approach that the Acceleration Directive requires regulated access to all gas networks. The Tyrol and Vorarlberg control areas can only be supplied from Germany, via the E.ON-Ruhr gas and Bayern-gas/Gasversorgung Süddeutschland networks, and possess no production or storage capacity, meaning that these geographically ring-fenced markets should be treated as separate from the Eastern control area (i.e. the remaining provinces). The final report will include recommendations for improvements in the competitive situation in these provinces.

Anticompetitive behaviour by incumbent suppliers

During the first two post-liberalisation years only 1.7% of all gas consumers changed suppliers. The churn rate for domestic consumers was 1.6% (2002–2003: 0.7%; 2003–2004: 0.9%). Yet the average household (annual demand of 15,000 kWh) could have achieved savings of about 10% by switching suppliers. Almost one-fifth of domestic consumers polled by Österreichische Gesellschaft für Marketing (OGM) in June 2004 stated that they would switch if they could make savings of this order. The discrepancy between stated willingness to switch (25%) and actual churning (2002–2003: 0.7%; 2003–2004: 0.9%) suggests that there are still substantial obstacles to supplier transfers. Monitoring of compliance with the unbundling rules has shown that the full separation of the system operation and merchant functions in the Austrian gas industry has for the most part only taken place on paper. The inadequacies of unbundling point to a continued incentive to shift profits from markets with high price elasticity (gas supply) into those with lower elasticity (monopoly areas like transmission and distribution), thus keeping out new entrants. However, there are no effective sanctions against violations of the unbundling rules at present, and an improvement in the current legislative framework would therefore be desirable.

Loyalty rebates and bonus systems create artificial switching costs that inflate the cost of transferring to a new supplier.

The incumbents profit from the lack of itemised billing of energy and system charges, since it is highly unlikely that such ill-informed consumers will switch. Analysis of the survey responses revealed that many consumers were unable to state the net energy prices they were paying. Some respondents (including medium-sized enterprise and industrial consumers) also confused the energy and overall prices.

Copies of invoices obtained by E-Control in connection with the January 2005 industrial price survey revealed that some gas companies were not itemising the system and energy components in their supply agreements as required by section 23(6) GWG (Natural Gas Act). The answers to specific inquiries directed to individual industrial consumers revealed that these companies often had considerable difficulty in determining the energy prices – on which suppliers compete – despite the fact that many had a good understanding of the charging basis.

Similarly to the planned action to stimulate retail market competition inspired by the findings of the electricity industry investigation, measures are to be developed for the gas market, compliance with which will be mandatory for the gas companies and will be monitored on an ongoing basis. This, too, will be a subject of the final report.

→ Incentive regulation⁹

Encouraged by constitutional court rulings and growing calls from regulated companies for increased planning certainty, in 2005 E-Control made a second – and this time successful – attempt to change over from a cost-based to an incentive regulation system.

The new system replaces the annual tariff determination procedure by a four-year regulation period during which rates are automatically adjusted according to a mechanism which is established ex ante.

History of incentive regulation

The system charges review project (April 2002 to October 2003) represented a first attempt to move from a cost-of-service to an incentive regulation system, but the proposals were not implemented by the Systemnutzungstarife-Verordnung ([SNT-VO] System Charges Order) 2003.

During the review process in the run-up to the 2005 amendments to the SNT-VO 2003, a regulatory model proposed by the VEÖ (Austrian Association of Electricity Companies) reopened the debate on incentive regulation. Although the Energy Control Commission ultimately decided against adopting the central arrangements required for the introduction of an incentive regulation system because the ongoing review procedure was already too far advanced, the regulatory authority signalled its continued openness to discussion, and E-Control firmed up the proposals by preparing a questionnaire entitled “Zukunft der Regulierung (The Future of Regulation)”.

At the request of the system operators the VEÖ answered the questionnaire on their behalf on 14 March 2005. Thereafter the Energy Control Commission outlined a multi-year regulatory model in a document entitled “Punktation zur Errichtung eines Regulierungssystems für die Systemnutzungstarife Strom” (Preliminary proposals for the establishment of a regulatory system for electricity system charges), issued on 13 April 2005, and charged E-Control with the detailed drafting, examination of special issues and initiation of discussions with the VEÖ. These talks resulted in a detailed proposal for the introduction of an incentive regulation system which was accepted by the VEÖ by a large majority on 12 July 2005. In mid-September the SNT-VO 2006 and the explanatory notes to it, containing a precise description of the new incentive regulation scheme, were distributed for comments. The SNT-VO 2006 entered into effect on 1 January 2006.

Regulatory objectives and overall goal

To achieve long-term stability, a system for regulating a natural monopoly must seek to reconcile a number of – sometimes contradictory – objectives. It must:

- Promote efficient behaviour on the part of the regulated companies in the interest of optimal economic outcomes;
- Protect consumers;
- Safeguard the viability and planning certainty of regulated companies;
- Promote good supply quality;
- Treat the regulated companies fairly;
- Minimise direct regulation costs;
- Be transparent, and
- Be accepted by all stakeholders (consumers, employees, owners, etc.), and thus be stable.

⁹ For a detailed account of incentive regulation see the explanatory notes to the Systemnutzungstarife-VO 2006 (System Charges Order 2006) posted on www.e-control.at (German only).

The overall goal of regulation should always be to strike a balance between the regulatory objectives in consultation of all concerned (companies, owners, consumer representatives, etc.), such that political support and stability are maintained throughout the regulation period.

Initial-cost basis

Incentive-based regulation systems decouple costs from profits for the duration of the regulatory period. However, before a profit path can be determined *ex ante*, a starting value must be established which meets the condition that “costs equal revenues”.

E-Control’s preference was for a system based on the most recent available information, which would have meant applying the cost data for the 2004 financial year. However, E-Control and the VEÖ came to the conclusion that this would make it difficult to introduce the scheme on 1 January 2006, as a nationwide audit of costs in financial year 2004 would probably have been incompatible with the launch date.

E-Control is therefore employing the most recent audited costs, applied during the tariff review procedure ahead of the 2005 amendments to the SNT-VO 2003, though some adjustments have been made. When calculating finance costs the possibility of an increase in the risk-free interest rate was taken into account by applying a three-year average. In addition, costs for the reference year – the financial year ended 31 December 2005 – were updated to reflect two opposing effects during the period: (i) exogenous, non-influenceable cost increases; and (ii) productivity improvements. The former effect was captured by adjusting a system operator price index, and the latter by a productivity offset of 4% for 2005 and 3.5% for the rest of the period.

Make-up of the incentive regulation system

The incentive regulation system takes account of overall industry trends, the performance of individual firms, company output trends, and uncontrollable cost increases by means of:

- A 1.95% frontier shift;
- Maximum productivity offsets of 3.5%;
- Profit weighting of output growth, and
- An adjusted system operator price index.

The duration of the first regulation period is four years.

Frontier Shift

The frontier shift reflects the fact that even an efficient company can achieve productivity improvements. Foreign studies indicate a range of between -1.3% and +3.9% for the frontier shift. The Norwegian revenue cap formula (2002–2006) applies a frontier shift of 1.5%. In the Netherlands the level was set at 2% during the first regulation period (2001–2003) and 1.5% during the second (2004–2006). In Finland the average frontier shift for the 1999–2002 period was calculated at 2.2%, and was adopted as a “general efficiency goal”. In England and Wales the current regulatory regime applies a frontier shift of 1.5% to the operating costs of electricity distribution system operators (2005–2010).

The reasonable level for the frontier shift came up during the system charges review. While some contributors to the discussion pointed to the negative impact of an excessive frontier shift, others stressed that the efficiency effect of incentive regulation – attainment of productive efficiency – did not depend on the level of the frontier shift, and an inadequate offset might actually lead to suboptimal efforts by companies.

E-Control has set the frontier shift for the first regulation period (2006–2009) at 1.5%. However this is exclusive of a further 0.45%, added to compensate for the dropping of the earnings sharing mechanism. This is intended to underpin broad-based political support as it is conditional on ex ante undertakings from companies to share a higher proportion of the cost savings with final consumers. The frontier shift adjusted for the earnings sharing mechanism is thus 1.95% (= 1.5% + 0.45%). An efficient company must thus achieve annual cost reductions of 1.95%.

Productivity offsets

The need for an equal productivity offset applicable to all companies is not disputed in the incentive regulation literature. However, determining offsets on a company-by-company basis is more contentious.

1. There is no precise measure of whether a company is actually inefficient.
2. There is no reason why an inefficient company should suddenly find it “easier” to reduce its costs.
3. There is no reason why an inefficient company should not be allowed to benefit from “easy” cost reduction measures.

However, the following counter-arguments present themselves:

→ Counter-argument to Objection 1: The reliability of efficiency analysis can be enhanced by engineering studies and the parallel application of a variety of benchmarking methods.

→ Counter-argument to Objection 2: If the aim is to use individual efficiency targets to imitate competitive markets this objection is immaterial, since in a competitive market an inefficient company would be compelled

to cut its costs by more than its rivals to stay in business.

→ Counter-argument to Objection 3: The aim of regulation must be to ensure that the regulated companies receive equal rewards for equal efforts. This would not be achieved by equal targets for efficient and inefficient companies, since outperformance would potentially be easier for the latter as they would be starting out from higher costs.

E-Control has opted for firm specific productivity offsets. These are used, for instance, to regulate electricity distribution system operators in England and Wales, the Netherlands and Norway.

In reaching this decision, E-Control was conscious of the need to avoid jeopardising the regulated companies’ viability whilst protecting final consumers. In an extreme case, prescribing excessively rapid cost reductions could drive a company out of business. It would be hard to countenance such a scenario due to the companies’ economic importance. At the same time however, the regulator must ensure that consumers are not forced to pay unnecessarily high charges for too long a period.

E-Control is giving inefficient companies eight years to reach the efficiency frontier. In order to avoid subjecting them to excessive financial strain, the maximum productivity offset has been pegged at 3.5%. In addition, a 74.76% floor has been placed under the efficiency score, meaning that a company with a lower score is still treated as though it had one of 74.76%.

Cost-adjustment factor

The cost-adjustment factor has two functions. It is intended to reflect both the frontier shift applicable to all companies and the catching-up process by which inefficient companies

reach the efficiency frontier. The cost-adjustment factor combines (i) the frontier shift (1.95%) and (ii) the productivity offset (max. 3.5%), resulting in a range of 1.95–5.45%.

Two different approaches to determining productivity offsets are to be found in international regulatory practice. These are:

→ Method 1:

Assignment of companies to efficiency classes associated with different productivity offsets, according to their efficiency scores.

→ Method 2:

No assignment to efficiency classes, but direct translation of the efficiency scores into the regulation formula.

The first approach is found in the regulation of the water industry in England and Wales and of electricity distribution in New Zealand. The direct method is employed in the Netherlands and Norway.

The advantage of assignment to efficiency classes lies in the fact that the productivity

offsets are not tied to a single value, meaning that the effects of any inaccuracies in the benchmarking analysis are mitigated. However, this is only true within a given efficiency class. If a company is on the borderline between two efficiency classes, a change of only a few percentage points in the efficiency score will result in a sharp increase or decrease in its individual productivity offset. This is a major disadvantage of efficiency classes.

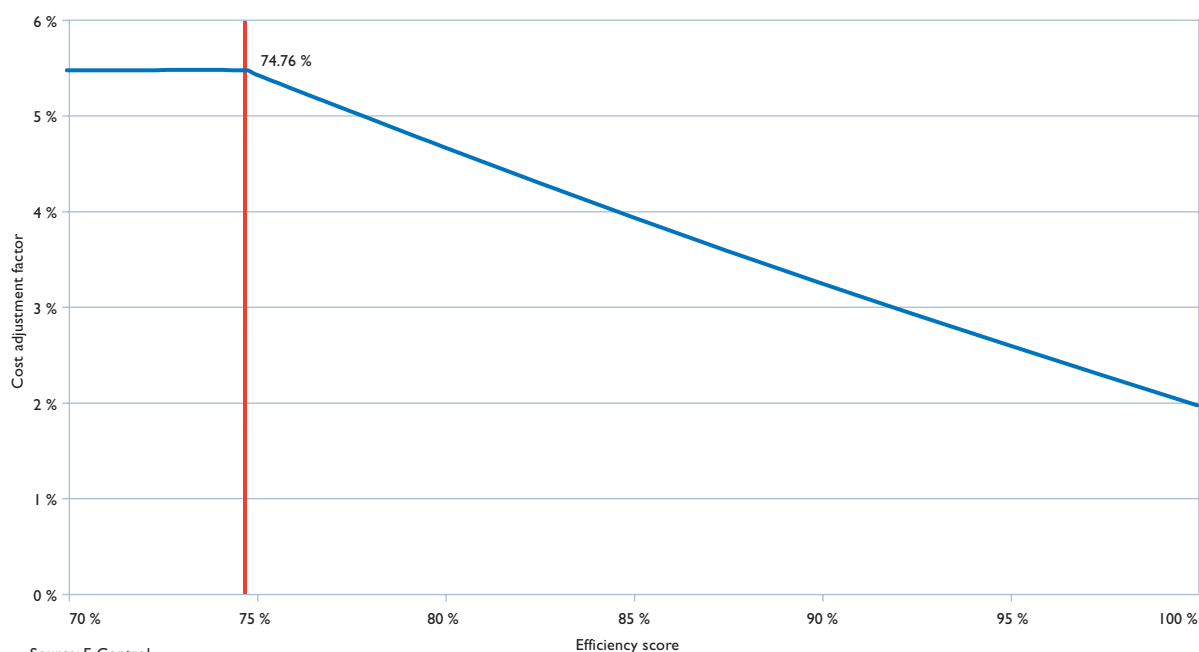
During the first system charges review, some companies criticised the efficiency class approach. The VEÖ, too, expressed a preference for direct translation of efficiency scores into productivity offsets.

E-Control has therefore opted for the second method. The potential drawbacks of this approach are lessened by the use of two different benchmarking methods to calculate the efficiency score, and by the eight-year catch-up period.

Chart 3 depicts the linear relationship between the efficiency score and the cost-adjustment factor. It can be seen that the cost-adjustment factor is capped at 5.45%.

→ Linear relationship between the cost factor & the efficiency score

Chart 3



Output factor

The cost structure of electricity distribution system operators is characterised by diminishing fixed costs. Where capacity is not fully utilised average cost will decline with an increase in the amount of power transported, since until capacity is reached the marginal cost of an additional unit of power distributed will be below the average cost. Only when full capacity is reached does additional investment in capacity become necessary, and once the investment is made new spare capacity arises. However, the increase in costs is normally less than proportionate to output growth.

Since experience of past tariff review procedures in Austria has shown that there are considerable differences between companies in terms of out-

put growth, E-Control decided to build it into the regulatory formula. Note was taken of the companies' comments during previous tariff reviews when designing the output factor.

The output factor reflects the impact of output increases on costs. Particular attention needs to be paid to the fact that volume growth at different grid levels results in differing cost increases, as the capacity of upstream grid levels has to be adjusted to volume growth at lower levels. This is reflected by weighting output rises by grid levels, applying the tariff revenues per grid level as the weighting factors (which will be updated in subsequent years). The revenue-weighted output increases are multiplied by a factor of 0.5 and added to the costs.

→ Calculation of the cost-adjustment factor

The formulas for calculating the cost-adjustment factor (CAF) for a company with an efficiency score (ES_{2005}) of 80% are set out below.

First step: Determination of costs at the end of the second regulation period

If a company has an efficiency score (ES_{2005}) of 80% then the cost-reduction potential to be realised over two regulation periods is 20%. The company's costs (C) must thus be 20% lower at the end of the second regulation period than at the beginning of the first. This can be expressed as follows: (1)

$$C_{2013} = C_{2005} \cdot ES_{2005} = C_{2005} \cdot 80\%$$

Second step: Adjustment for the frontier shift

When calculating the costs at the end of the second regulation period, account must be taken of the fact that the efficiency frontier will meanwhile have moved due to the frontier shift (improvement in the productivity of the efficient companies). Equation (1) only gives the costs that would arise if there was no shift in the efficiency frontier. The inefficient company must also keep up with the frontier shift, as well as achieving the 20% cost reductions, if it is to reach the efficiency frontier by the end of the two regulation periods. Equation (1) must thus be adjusted for the 1.95% frontier shift (FS): (2)

$$C_{2013} = C_{2005} \cdot (1-FS)^8 \cdot ES_{2005} = C_{2005} \cdot (1-1.95\%)^8 \cdot 80\%$$

Third step: Calculation of the annual cost-adjustment factor

Equation (2) is used to calculate the costs at the end of the second regulation period. This yields the annual cost-adjustment factor, which is given by: (3)

$$C_{2013} = C_{2005} \cdot (1-CA)^8$$

$$(4) \quad CA = 1 - \sqrt[8]{\frac{C_{2013}}{C_{2005}}} = 1 - \sqrt[8]{\frac{C_{2005} \cdot (1-1.95\%)^8 \cdot 80\%}{C_{2005}}} = 1 - (1-1.95\%)^8 \cdot \sqrt[8]{80\%}$$

Given an 80% efficient company and a frontier shift of 1.95% the annual CA will thus be 4.65%.

→ Output factor: formula

The formula for the output factor used from 1 January 2006 onwards is as follows:

$$(1 + 0.5 \cdot \Delta M_{2006}) = (1 + 0.5 \cdot \frac{\sum_{i=1}^n P_{2005,i} \cdot Q_{2004,i}}{\sum_{i=1}^n P_{2005,i} \cdot Q_{2003,i}} - 1)$$

$P_{2005,i}$ = System charges in 2005 for tariff components $i = 1, \dots, n$

$Q_{2005,i}$ = Output in 2005 for tariff components $i = 1, \dots, n$

Distribution price index

In order to conform to the principle of cost reflection it is necessary to adjust the costs during the regulation period to increases in exogenous, i.e. uncontrollable costs by applying a price index.

Increases in system operators' costs are reflected in changes in a distribution price index. This index consists of:

- Index of agreed minimum wages (overall index), compiled and published by Statistics Austria. The change in the wage index serves as a proxy for the evolution of staff costs (weighting: 40%).
- Construction-price index (overall index), compiled and published by Statistics Austria. The change in the construction-price index serves as a proxy for the evolution of capital and material costs (weighting: 30%).
- Consumer-price index, published by Statistics Austria. The change in the consumer-price index serves as a proxy for the evolution of other costs (weighting: 30%).

The above weightings of the sub-indices are based on the current average cost structure of Austrian system operators.

→ System charges: formula

The formula for application of the regulatory parameters to the system charges as of 1 January 2006 is:

$$C_{2005} \cdot [(1 - CA) \cdot (1 + c \cdot \Delta NPI_{2006})] \cdot (1 + c \cdot \Delta O_{2006}) + uSC_{2006} = \sum_{i=1}^n P_{2006,i} \cdot Q_{2004,i} + ME_{2006} + CCI_{2004}$$

c = cost-output factor

CA = cost-adjustment factor

C_{2005} = costs at 31 December 2005

$P_{2006,i}$ = system charges for 2006 for tariff components
 $i = 1, \dots, n$ (GL3-CC, ..., GL7-LWR)

$Q_{2004,i}$ = output for tariff components
 $i = 1, \dots, n$ (GL3-CC (MW), ..., GL7-LWR (MWh))

ME_{2006} = metering revenues at current rates

ΔNPI_{2006} = change in system-operator price index

ΔO_{2006} = weighted output change 2004/2003

uSC_{2006} = upstream system charges for 2004 (less the tariff reduction after 2004) excluding system losses

Transformation of the regulation parameters into system charges

The cost adjustments arrived at for the respective companies must be converted into charges ("tarification") on the effective dates within the regulation period (1 January 2006/2007/2008/2009).

"Tarification" means combining the cost and output structures to yield the tariffs, i.e. the tariff units. The allowable costs to which the above regulatory parameters (cost-adjustment factor, output factor and change in the distribution-price index) are applied must be allied to a demand structure. In line with the lessons learned from its regulatory experience, E-Control applies the most recent actual values available to it, rather than estimates.

Tarification is a complex process in that account must be taken of the interaction of a number of tariff components. The following information, derived from data for the 2004 financial year, was used to determine the tariffs as of 1 January 2006:

- Upstream system charges, i.e. those normally billed by Verbund-APG to the provincial utilities and by the provincial to the municipal utilities, measured at the rates in force from 1 January 2006 onwards;
- Equalisation payments within grid zones;
- Amounts of power supplied, invoiced services, number of consumers per grid level and tariff unit;
- Number of meters times current metering charges;
- Release of provisions for consumers' contributions to investment (CCI) (CCI, system provision charges and system admission charges).

Benchmarking analysis

System charges can be determined by reference to the costs of a comparable, rationally managed company. The Austrian incentive-regulation system uses the cost-adjustment factor, which is determined by company specific efficiency, for this purpose. In order to arrive at the efficiency of the regulated companies E-Control performed a benchmarking analysis based on the 2003

study entitled “Benchmarking des Stromnetzbetriebs in Österreich” (Benchmarking electricity system operation in Austria) by Frontier Economics and Consentec. During the negotiations on the incentive-regulation system the VEÖ retained Plaut Economics as its benchmarking analysis consultants.

The aim of benchmarking analysis is to assess whether actual system operation costs accord with those that would result from rational operation. This makes it possible to compare the costs of the company in question with those of one or more rationally managed firms. The special features of the companies studied must be captured and their impact on costs ascertained.

Benchmarking analyses can be broken down into a number of stages:

- Selection of the benchmarking method;
- Selection of cost data;
- Selection of output and structural data;
- Conduct of the analysis;
- Consultation of the companies.

The companies’ agreement must be secured at every stage of the analysis. During the first tariff review project, objections from the companies studied were a major obstacle.

→ Classification of benchmarking methods

The main distinction between benchmarking methods is according to the manner in which the efficiency yardstick is computed, namely, between econometric (parametric) and linear optimisation (non-parametric) approaches. A further distinction is according to whether they allow for random variations in data and thus in the related efficiency ratings (stochastic models) or do not do so (deterministic models).

→ Benchmarking methods

Chart 4

Estimation method	Non-Parametric	Data Envelopment Analysis (DEA) <i>CRS</i> : Charnes, Cooper, Rhodes (1978), <i>VRS</i> : Banker, Charnes & Cooper (1984), Fare, Grosskopf & Lovell (1994); <i>non-convex FDH</i> : Desprins, Simar & Tulkens (1984)	Stochastic or chance-constrained Data Envelopment Analysis (SDEA) <i>CRS/VRS</i> : Land, Lovell & Thore (1993), Weyman-Jones (2001)
	Parametric	Corrected/Modified Ordinary Least Squares CRS & VRS regression (COLS, MOLS & goal programming) Greene (1997), Lovell (1993), Aigner & Chu (1968)	Stochastic Frontier Analysis (SFA) <i>CRS/VRS</i> : Aigner, Lovell & Schmidt (1977), Battese & Coelli (1992), Coelli, Rao and Battese (1998)
		Deterministic	Stochastic

Measurement of efficiency relative to the frontier

Source: Frontier Economics

Selection of the benchmarking method

The term “benchmarking methods” refers to mathematical models that relate individual companies’ inputs and outputs and use the productivity indicators thus obtained to compare their efficiency with that of other firms. All the methods relate the efficiency of the companies studied to best-practice companies. The efficiency of best-practice companies is usually taken as 100%. A few efficient companies are scored at less than 100%.

When selecting the benchmarking methods E-Control paid particular attention to their varying methodological characteristics, so as to ensure that the pros and cons of different methods balanced each other out.

- Data envelopment analysis (DEA):
a non-parametric/deterministic method
(constant returns to scale)
- Modified ordinary least squares (MOLS):
a parametric/stochastic method

In contrast to the discussions during the first tariff review project, no distinction was drawn between a primary and a secondary method. Instead, the efficiency scores were computed by weighting the results of the two benchmarking methods (DEA and MOLS).

Variable selection: costs

The costs employed as input variables can either be operating expenses alone or total expenses (operating and capital costs). The use of total expenses has the advantage that the benchmarking results are not distorted

by the capital intensity assumed. This rules out the creation of distortionary incentives for suboptimal capital intensity, as substitution of operating by capital costs does not change the efficiency score unless it results in savings on total expenses. E-Control therefore uses the “totex” method.

Variable selection:

output and structural parameters

International benchmarking experience shows that the selection of the output and structural parameters used as independent output variables is no easy task. In the academic literature and foreign regulatory practice the basis for the selection of output and structural parameters is usually a list of variables believed to be related to network costs. Examples of intuitively plausible variables are units of energy delivered, number of customers, service area, network length, peak load and the number of transformers.

As a preliminary step, E-Control subjected these intuitively plausible cost relationships, on which the selection of output variables in the international benchmarking literature is based, to an objective test in the form of an engineering-based model network analysis (MNA). An MNA is an aid to discovering which characteristics of a company’s supply tasks significantly influence which network assets needed to perform them, and what functional relationships exist between the factors in question and network size. The results are used both to narrow down the field of potential variables and to arrive at a clearer view of the

heterogeneity of the operating environment. In the course of the MNA several thousand network models were designed in order to identify significant relationships. The analysis showed that:

- There is no single factor that satisfactorily explains total network size. The necessary scale of network assets is determined by different factors at each grid level.
- The cumulative load density (peak load per area) of all the downstream grid levels has a significant influence on the transformer grid levels. The relationship between these variables is linear.
- There is a correlation between network density (line length per km²) and connection density (connections per km²) at given grid levels, but the functional relationship is quadratic and hence strongly non-linear.

The MNA revealed that the cost drivers are load and connection density per grid level. However, because of the non-linear functional relationship between the two, area weighting was necessary. The MNA thus yielded the following cost drivers:

- Peak load on the medium voltage (MV) network;
- Peak load on the low voltage (LV) network;
- Area-weighted connection densities on the high, medium and low voltage networks.

Thereafter a regression analysis was used to test the significance of the output variables arrived at by the MNA and of others cited in the international and Austrian literature on potential cost drivers (e.g. cabling). This showed the MV network peak load, LV network peak load and area-weighted connection densities to be statistically significant. The other output variables were seen to be statistically insignificant. Plaut Economics analysed further potential cost drivers (e.g. average demand and number of LV transformers), but found no systematic relationships between them and the efficiency scores.

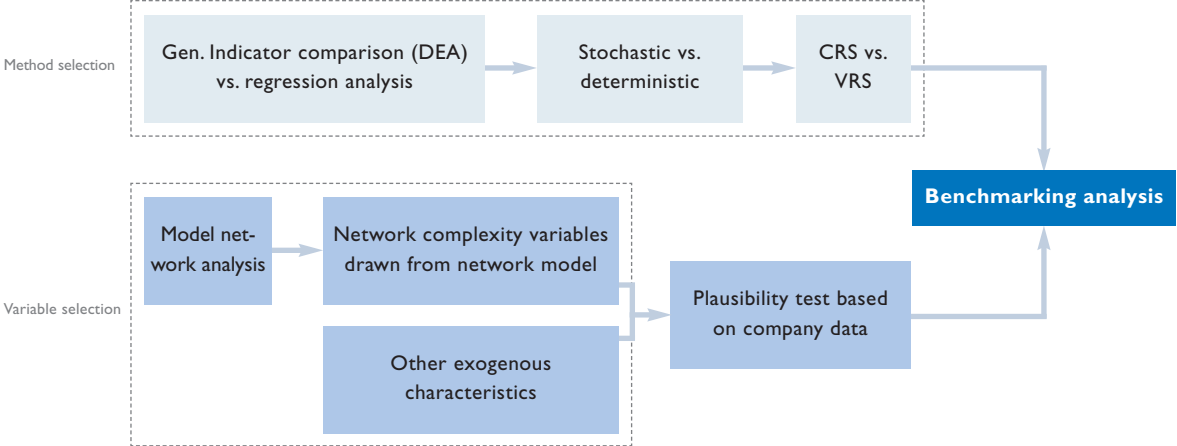
E-Control is therefore employing MV network peak load, LV network peak load and area-weighted connection densities on the high, medium and low voltage networks as the output variables/output and structural parameters for the DEA and MOLS analyses.

Chart 5 further clarifies the relationship between the MNA and the benchmarking analysis. It shows that the MNA is used as a preliminary step towards variable selection,

and that the companies' costs are in no way comparable with those of an optimal "green-field" model network.

→ Relationship between the model network and benchmarking analysis

Chart 5



Source: Frontier Economics/Consentec

Conduct of the analysis

In June 2005, E-Control sent the preliminary benchmarking results to the companies. At the same time the data used in the analysis was sent to the VEÖ's consultants, Plaut Economics to enable them to validate the results. In their final report Plaut Economics raised no major objections to the analysis, though they called for some minor modifications (e.g. the removal of a data outlier from the sample). E-Control examined the proposed changes and incorporated most of them in the benchmarking analysis.

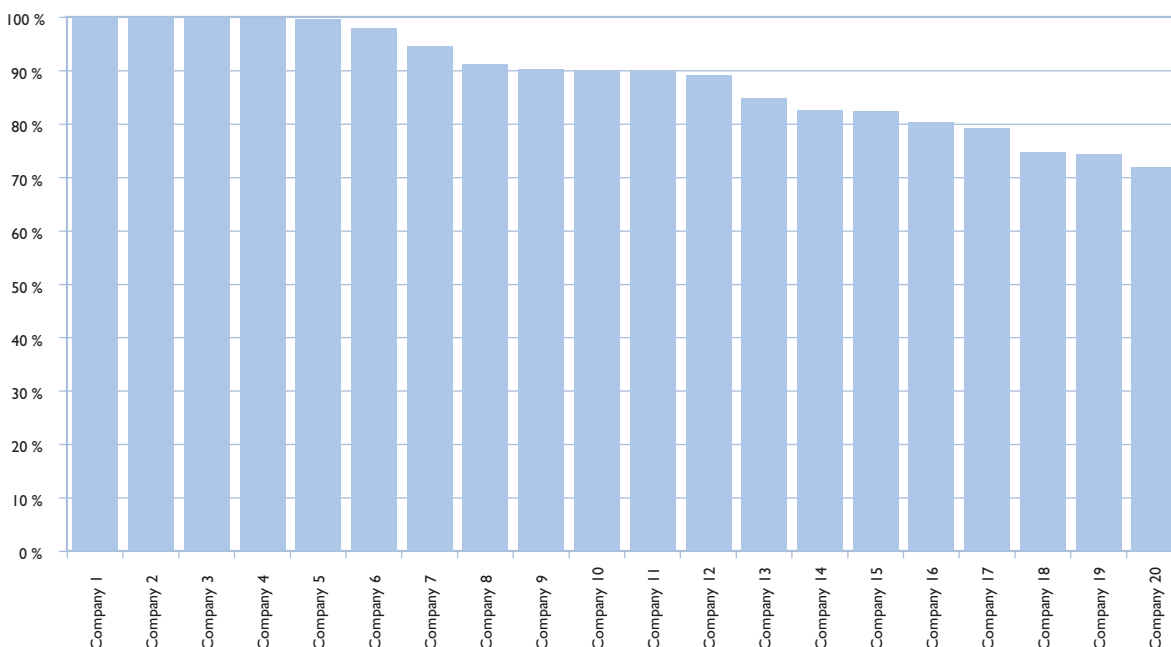
In September new benchmarking results were sent to the companies in a report entitled "Ermittlungsverfahren betreffend Änderung der Systemnutzungstarife" (Investigation relating

to Changes to the System Charges). During the consultation process some companies made objections to the benchmarking results, and E-Control examined these and in some cases made changes. This led to some marginal modifications as compared to the results distributed in September.

The weighting of the final DEA and MOLS results yielded an average efficiency for the sample of 88.67%. The average efficiency yielded by the results communicated to companies in June 2005 had been 83.33%. The difference reflects acceptance of the arguments advanced by Plaut Economics and the companies. Chart 10 portrays the efficiency scores (ES_{2005}) used to compute the cost-adjustment factor.

→ Efficiency scores, 2005

Chart 6



Source: E-Control



The electricity market in 2005



→ **Developments on the Austrian electricity market**

In the 2004 calendar year Austrian final customers consumed 59.4 TWh of electricity. This represents an increase in consumption of 1.7 TWh or 3.0% in comparison with 2003. End-users withdrew 51.8 TWh from the public grid – a year-on-year increase of 1.4 TWh or 2.8%. The growth in autogeneration by large consumers again outstripped that of their offtake from the public grid.

Over the ten years to 2004, total domestic electricity consumption – i.e. total consumption by end-users plus distribution-system losses, own use by generators and generation losses – grew by an annual average of 2.4%, while the increase in consumption of electricity supplied from the public grid averaged 2.7%. Electricity demand growth has accelerated over the past few years (see Chart 7).

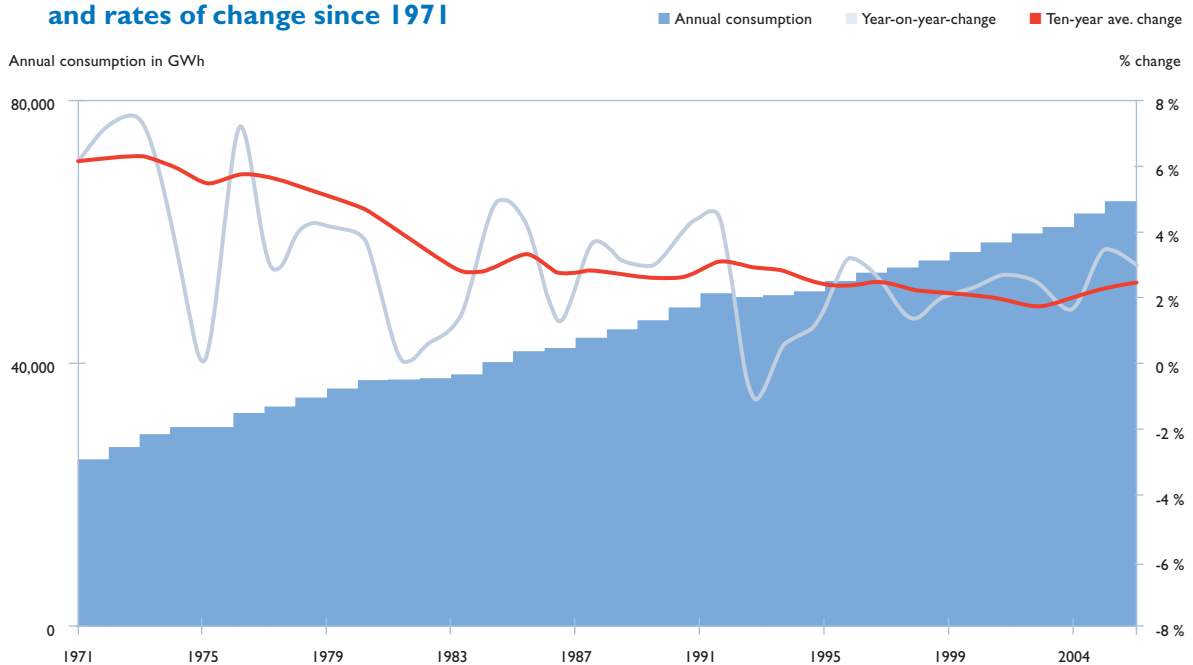
Demand growth slowed markedly over the first three quarters of 2005. A total of 47.7 TWh of power were consumed in Austria – an increase of 0.4 TWh or 0.9%, whereas demand expanded by 2.8% in the same period of 2004.

A total of 40.8 TWh was withdrawn from the public grid in the first nine months of 2005 – 3 TWh or 0.7% up on the same period of 2004. Again, this represented a sharp slow-down in growth.

At 49.4 TWh, generation by domestic power stations was 1.0 TWh or 2.0% higher than in the first three quarters of 2004. Water supply in the first three quarters of 2005 was equal to the long-term average (energy capability factor of 1.01) and was unchanged from the same period of 2004. However, there were strong seasonal fluctuations in generation by run-of-river power stations which declined by 0.4% year on year to 19.3 TWh. At 9.2 TWh, generation

→ **Evolution of energy demand – Domestic electricity consumption and rates of change since 1971**

Chart 7



Source: E-Control

from storage power stations was also down by 0.4% on the previous year. Output from thermal power stations was 16.9 TWh or 4.8% up on 2004. Electricity that could not be classified by power station types or primary energy sources amounted to 4.0 TWh.

Physical power imports were up 2.7 TWh or 23.5%, and exports by 3.0 TWh or 28.7%. This means the import surplus was reduced by 0.3 TWh to 0.8 TWh.

At the end of September, storage power stations held 3.0 TWh, corresponding to 92% of storage capacity as compared to 90% a year before. At the same time, fossil fuels with an energy content of 7.5 TWh were in storage at thermal power stations, compared to 7.2 TWh a year earlier.

Market structure and concentration (suppliers and ownership)

In contrast to the initial post-liberalisation period, there was little merger and acquisition activity in the Austrian electricity industry in 2005. Among the few exceptions were acquisitions of equity interests by Salzburg AG and ESTAG from Verbund, arising from the planned part-merger between Verbund and EnergieAllianz to form Energie Austria. Verbund fulfilled commitments given in connection with the transaction by selling its holdings in Unsere Wasserkraft and MyElectric to ESTAG and Salzburg AG, respectively.

The complete takeover of Austrian Power Vertriebs GmbH (APC) by the Slovenian Instrabenz

Group in the summer of 2004, meeting the key condition imposed during the Energie Austria merger proceeding, brought a new power supplier on to the Austrian market.

Energie Austria has not yet commenced operations, although the planned operational start-up date was 1 October 2004. Some of the parties to the merger have voiced criticism of it, though it has been cleared by the European Commission and the undertakings given at the time have so far been fulfilled.

As regards Austrian energy companies' strategic alignment, efforts to refocus on core competencies (energy supply services) were the main feature of last year's developments. Non-utility investments were divested, and core activities strengthened, mainly by means of expansion abroad. In addition to electricity and gas, most Austrian energy companies are also active in the water, district heating, waste incineration and wastewater disposal industries, as well as telecommunications, either directly or through equity investments.

Apart from their investments in domestic companies, foreign companies have been retreating from the Austrian market. For instance, EnBW withdrew at the end of the year, transferring its major customers to Steweag-Steg. It remains to be seen how far the arrival of Istrabenz will give a shot in the arm to competition, which has hitherto largely been restricted to domestic players and is likely to be weakened by implementation of the Energie Austria part-merger and the departure of EnBW.

→ Green power

The Green Electricity Act (BGBl [Federal Law Gazette] I No. 149/2002), which entered into force in 2003, introduced a single nationwide system of support payments for “other” green power (biomass, wind, photovoltaic and geothermal) and small hydro power. The uniform injection tariffs set for the primary energy sources (Injection Tariff Order, BGBl II No. 508/2002) were designed to enable the statutory targets for 2008 (4% of total supply for “other” green power and 9% for small hydro power) to be met (Chart 8). The order contains specific deadlines for “other” renewable generating stations which must be met to obtain these injection tariffs. In August 2005 Order BGBl II No. 254/2005 extended the second time limit – the commissioning deadline for biomass stations – from mid-2006 to the end of 2007.

Under the Green Electricity Act, responsibility for take-up of, and compensation for renewable electricity was transferred from the system operators to the control area managers (Verbund APG, TIRAG and VKW) in their capacity as green-power balancing-group representatives. The support payment system is financed by a single nationwide surcharge on system charges paid by final customers and a resale price of 4.5 cents/kWh paid by electricity traders (Table I).

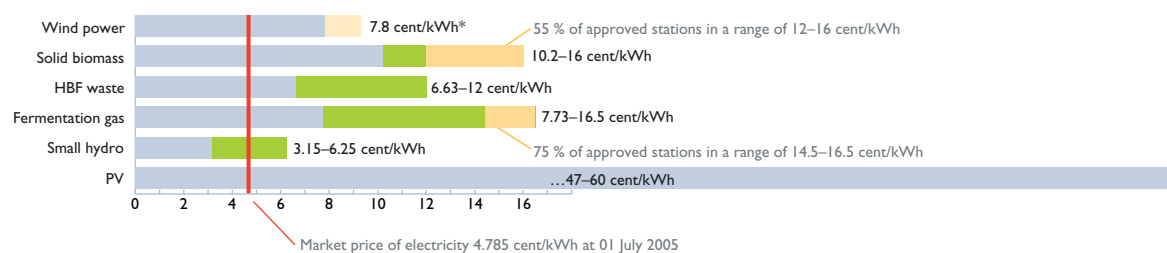
The new legislation has touched off a boom in renewable electricity generation. For instance, the installed capacity of supported biomass plants and wind farms doubled in 2004 (see Table 2), while the number of accreditation notices issued by provincial governors – these are required by all renewable generating stations – points to significant future growth. Current data indicates that the renewables targets established by the Green Electricity Act will be overshoot (see Chart 9). The 4% target was almost attained in 2005, and a level of 7–7.5% of total supply is likely to be reached by 2008.

Overfulfilment of the statutory targets is resulting in increased funding requirements. Some EUR 150 m in subsidies were needed in 2005 to finance the 4% contribution of “other” green power to supply. Under current legislation the amount will rise to about EUR 270m by 2007 and will not return to zero until 2021 (Chart 10).

As in 2004, the rapid expansion of renewable generation and the high costs associated with it shown by the latest data prompted calls for amendments to the Green Electricity Act. In November 2005 the parliamentary economics committee approved a bill amending the Green Electricity Act. The bill is currently being reviewed by the European Commission, and must still be passed by the lower and upper houses of parliament.

→ Injection tariffs under the Injection Tariff Order

Chart 8



* plus appr. 1–1.5 Cent/kWh for balance energy

Source: E-Control

→ Cost of support payments for “other” green power and small hydro power

Table I

“Other” green power	in Cent/kWh				
	2003	1 Jan 04 – 31 Mar. 04	1 Apr. 04 – 31 Dec. 04	2005	2006
Average support payment	0.120	0.120	0.183	0.242	0.416
Grid levels 1-3 (78%)	0.094	0.094	0.143	0.189	0.325
Grid levels 4-5 (92%)	0.110	0.110	0.168	0.222	0.382
Grid level 6 (96%)	0.115	0.115	0.175	0.231	0.398
Grid level 7 (111%)	0.134	0.134	0.204	0.270	0.464
Support component in retailer's settlement price (4.5 cent/kWh for RES-E)	0.050	0.050	0.050	0.060	0.060
Cost burden (ave. support contribution plus support component in settlement price)	0.170	0.170	0.230	0.300	0.480
Small hydro					
Support contribution (all grid levels)	0.005	0.005	0.035	0.002	0.000
Support component in retailer's settlement price (4.5 cent/kWh for RES-E)	0.120	0.120	0.070	0.080	0.080
Cost burden (ave. support contribution plus support component in settlement price)	0.130	0.130	0.110	0.080	0.080

Source: E-Control

→ Comparison of accredited renewable generating stations and stations under contract to green-power balancing-group representatives

Table 2

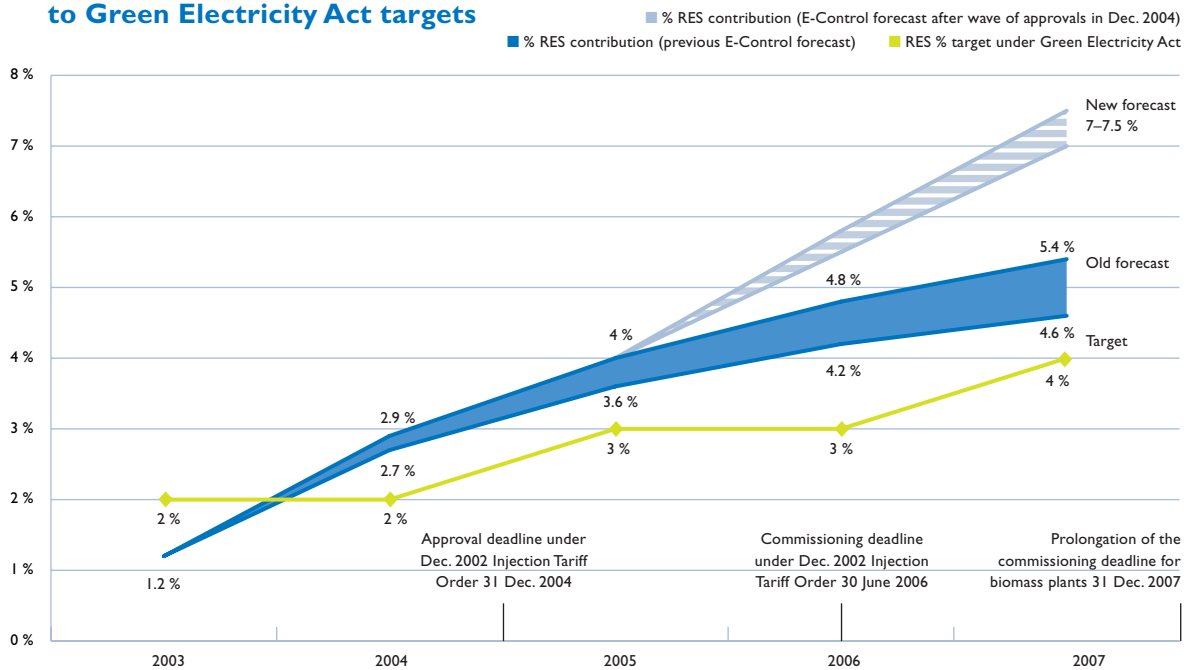
Evolution of renewable capacity [in MW] under contracts to GPBGRs and accredited capacity [preliminary figures as of January 2006]			
Energy source	Under contract to GPBGR at 31 December 2003	Under contract to GPBGR at 31 December 2004	Accredited stations at 31 December 2005
Biogas	14.97	28.36	80.78
Solid biomass	41.07	87.54	396.94
Liquid biomass	1.97	6.84	24.07
Landfill and sewage gas	22.73	20.28	29.50
Geothermal	0.92	0.92	0.92
PV*	14.18	15.07	29.66
Wind	395.59	594.56	961.83
Small hydro up to 10 MW	858.10	851.54	1,147.05

* Under section 10(2) Green Electricity Act GPBGRs are obliged to accept electricity from PV systems even if the 15 MW limit has been exceeded.

Sources: E-Control and green-power balancing-group representatives

→ Supported renewable electricity contribution as compared to Green Electricity Act targets

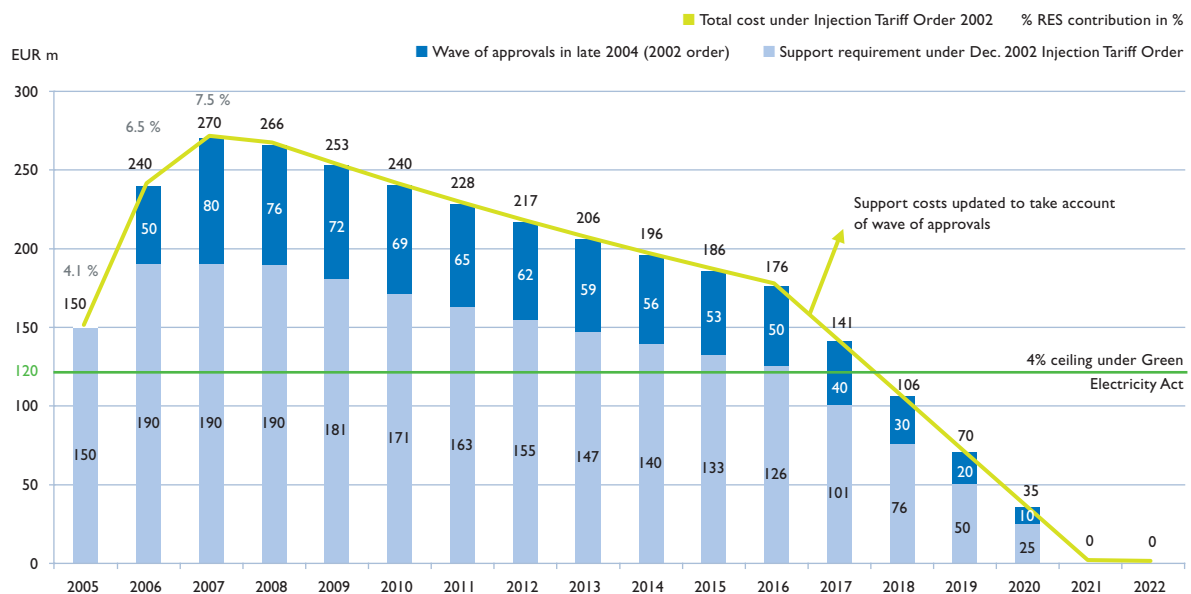
Chart 9



Source: E-Control

→ Contribution of supported “other” green power 2005–2021

Chart 10



Source: E-Control

→ Wholesale prices

While spot prices on the Leipzig EEX electricity exchange were marginally above 2003 levels in 2004, they rose sharply in 2005 and were above the previous year's levels for much of the year (see Chart 11). This trend was largely driven by two factors:

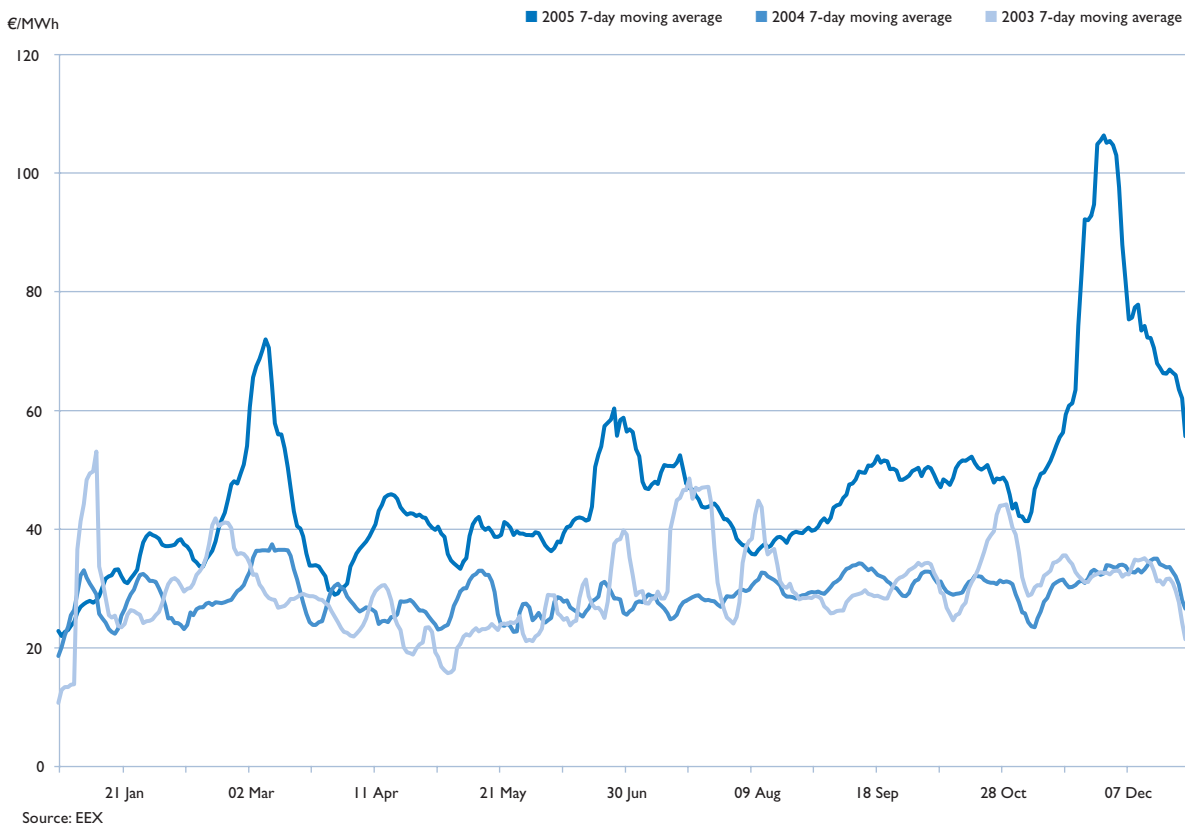
- Higher primary energy prices (coal, oil and gas); and
- The introduction of the CO₂ allowance system.

Because the German and Austrian wholesale markets are so highly integrated, wholesale prices in the two countries tend to move in step, and spot prices thus also rose on the Graz EXAA electricity exchange in 2005.

The CO₂ allowance system and rising primary energy prices influenced futures prices (see Chart 12). In 2005, prices for 2006 annual baseload contract were well above those for the year-ahead contract in 2004.

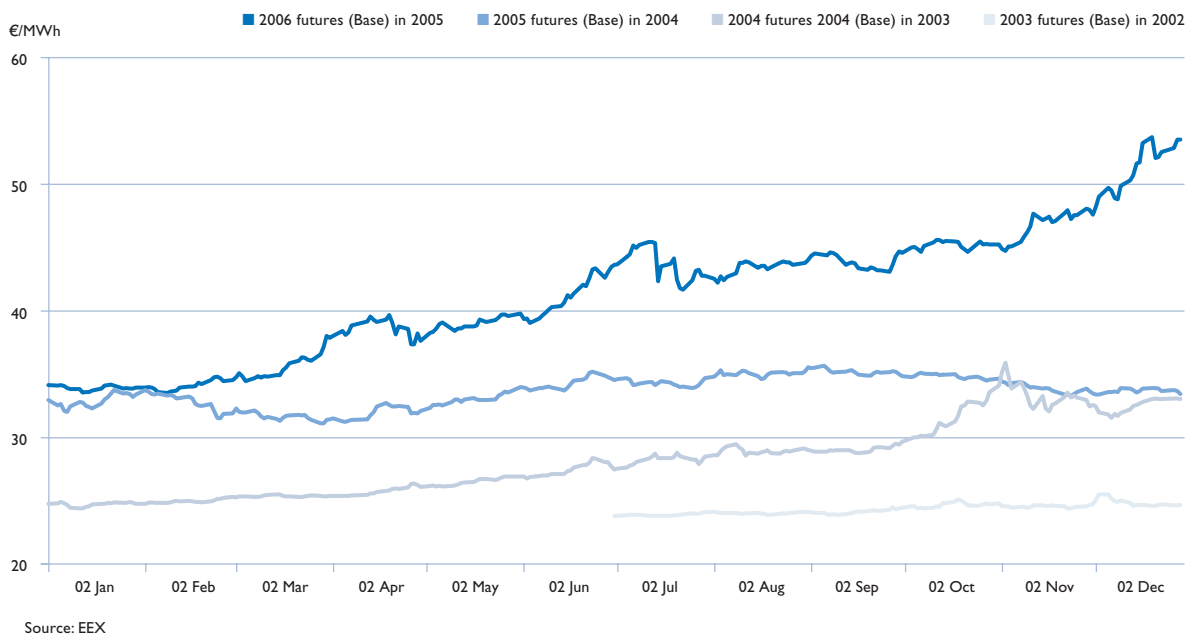
→ (Base) spot-price movements on the EEX

Chart 11



→ Futures price trends on the EEX (Futures EEX Base year ahead)

Chart 12



→ Electricity-price comparisons

Industrial electricity prices

Increased wholesale prices feed through to industrial consumer prices. As Charts 13 and 14 show, prices have risen sharply since 2003. The energy price is determined by the timing of the quotation.

The charts also reveal that high levels of capacity utilisation (more than 4,500 full-load hours) are associated with lower prices than lower levels (less than 4,500 full-load hours). This is because at lower capacity-utilisation levels consumption is usually more concentrated between 8am and 8pm or around the middle of the day, when electricity prices are higher than supply spread evenly over the entire day.

Domestic electricity prices

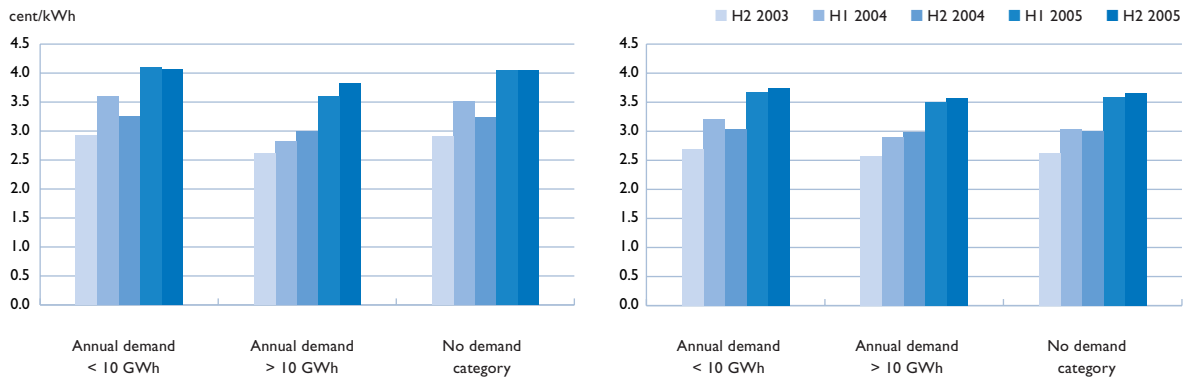
After energy price increases – mostly imposed by local players – in autumn 2004, the first half of 2005 saw a decline in overall prices due to the system charge reductions ordered by the E-Control Commission. Some incumbents took the opportunity presented by these reductions in system charges to raise their energy rates again in the first half of 2005 – sometimes by the same amount as the system charges had been cut, as can be clearly seen from Chart 15.

Chart 16 shows the evolution of the prices of the cheapest suppliers in various grid areas. Here, the reductions in system charge led to marked falls in the overall prices. Although the cheapest supplier was the same in most grid zones, the total prices varied because of the different system charges.

→ **Industrial electricity-price trends:**

< 4,500 full-load hours (left side) and > 4,500 full-load hours (right side)

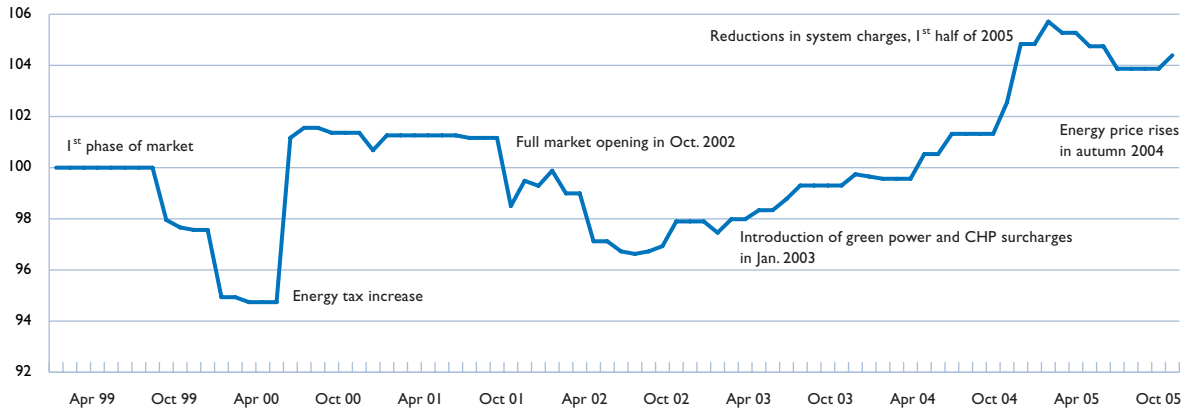
Chart 13, 14



Source: E-Control

→ Electricity CPI, 1999–2005 (1999 = 100)

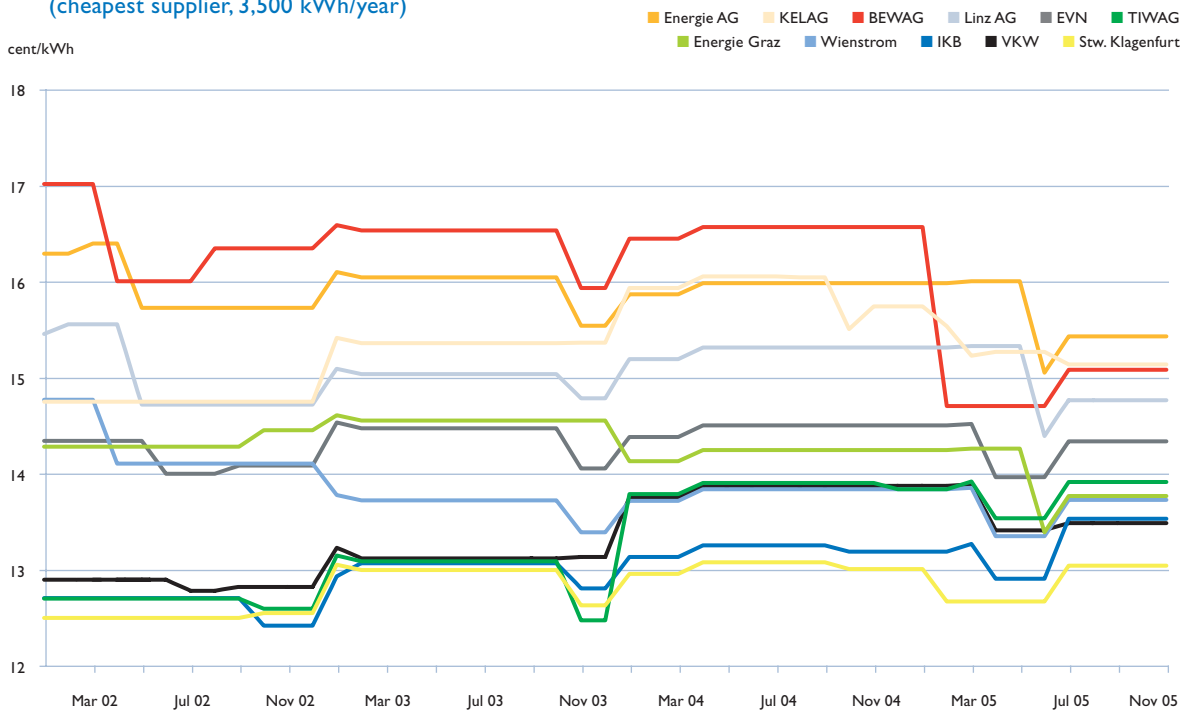
Chart 15



Source: Statistics Austria and E-Control

→ Domestic electricity prices incl. taxes and levies, by grid areas (cheapest supplier, 3,500 kWh/year)

Chart 16



Source: E-Control



→ **Network regulation: electricity-tariff determination**

During the year under review, major advances were made in the regulation of electricity system charges, resulting in further substantial savings for system users.

The three amendments to the 2003 SNT-VO (System Charges Order) made in 2005 reduced the system charges (use of system and system-loss charges) by a national average of 10.8%. The decision to lower electricity distribution system operators' tariffs reflected:

- The wish to ensure that reductions in transmission system charges were passed on;
- Cost savings achieved by system operators;
- Critical scrutiny of certain cost items,
- A review of the formula for allocating costs between system operation and other areas of business;
- Updating of costs by applying a productivity offset.

The 2005 amendments to the SNT-VO 2003 entered into force in three phases:

- Phase one (1 February 2005): Burgenland, Carinthia, Salzburg, Klagenfurt and Verbund-APG;
- Phase two (1 April 2005): Innsbruck, Lower Austria, Tyrol, Vienna and Vorarlberg;
- Phase three (1 June 2005): Graz, Kleinwalsertal, Linz, Styria and Upper Austria.

Meanwhile, the changeover from a cost to an incentive-based regulatory regime, culminating in the SNT-VO 2006 (see the section Incentive regulation), was successfully accomplished during the year. The SNT-VO 2006 came into force on the 1 January 2006, ushering in a further average drop in use of system charges of 5.3%. This was partly offset by higher system-loss charges, resulting in an overall average decrease of some 3% as of 1 January 2006. E-Control's regulatory activities in 2005 thus led to a total decline of around 13.5% in the system charges (use of system and system-loss charges).

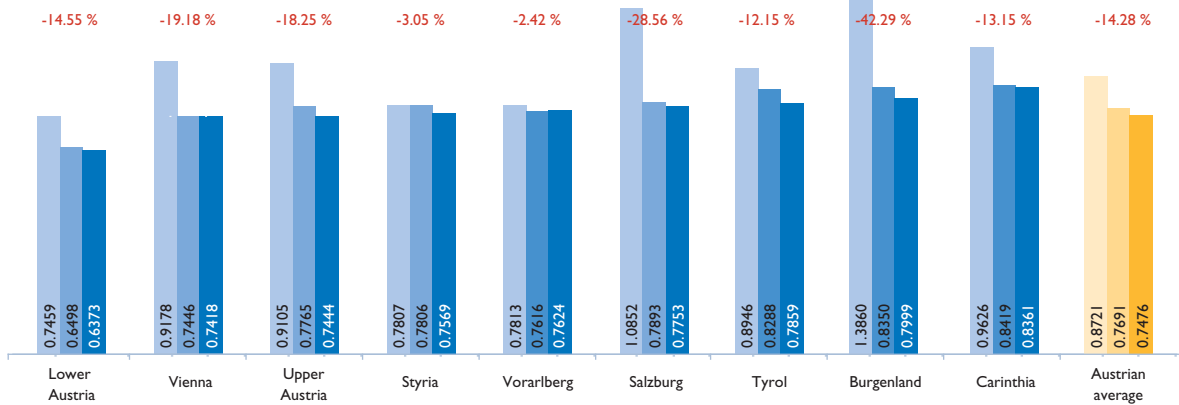
Charts 17–23 and Table 3 depict the effects of the tariff adjustment phases under the 2005 amendments to the SNT-VO 2003 and the SNT-VO 2006 as compared to the situation at the outset of E-Control's regulatory activities. System charges have decreased by more than 23% over this period (see charts 17–23). In absolute terms, the various adjustments by E-control to the use of system charges have brought final customers annual savings of some EUR 480m on the basis of supply volume in 2003 (see Table 3), cushioning the impact of taxes and energy price increases.

→ Use of system and system-loss charges – Grid Level 3

Chart 17

Use of system and system-loss charges
Hours of use (annual consumption/annual billing demand)
TOU = 6,100 h
Cent/kWh

■ SNT-VO as of 30 Sept. 2001
■ SNT-VO as of 1 June 2005
■ SNT-VO as of 1 Jan. 2006



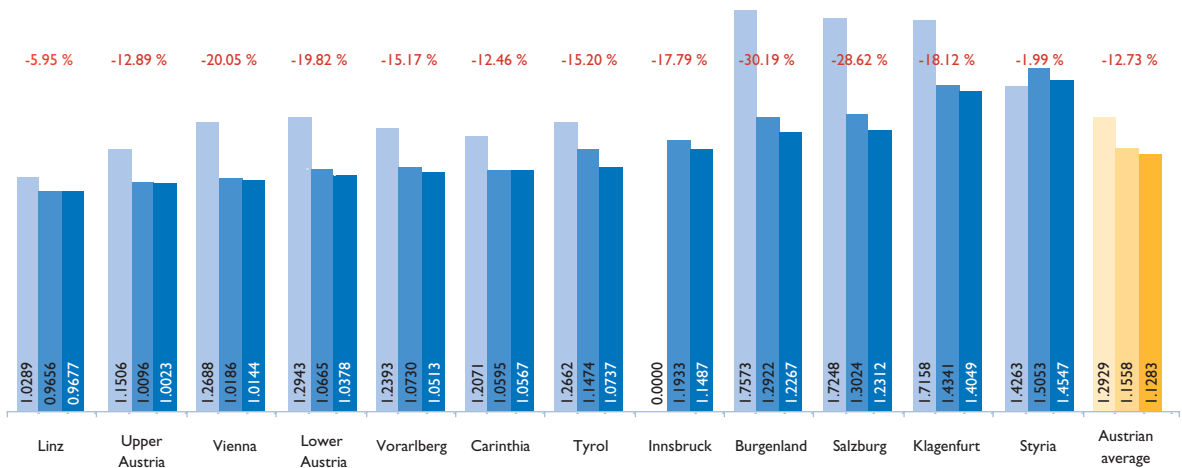
Source: E-Control

→ Use of system and system-loss charges – Grid Level 4

Chart 18

Use of system and system-loss charges
TOU = 5,700 h
Cent/kWh

■ SNT-VO as of 30 Sept. 2001
■ SNT-VO as of 1 June 2005
■ SNT-VO as of 1 Jan. 2006

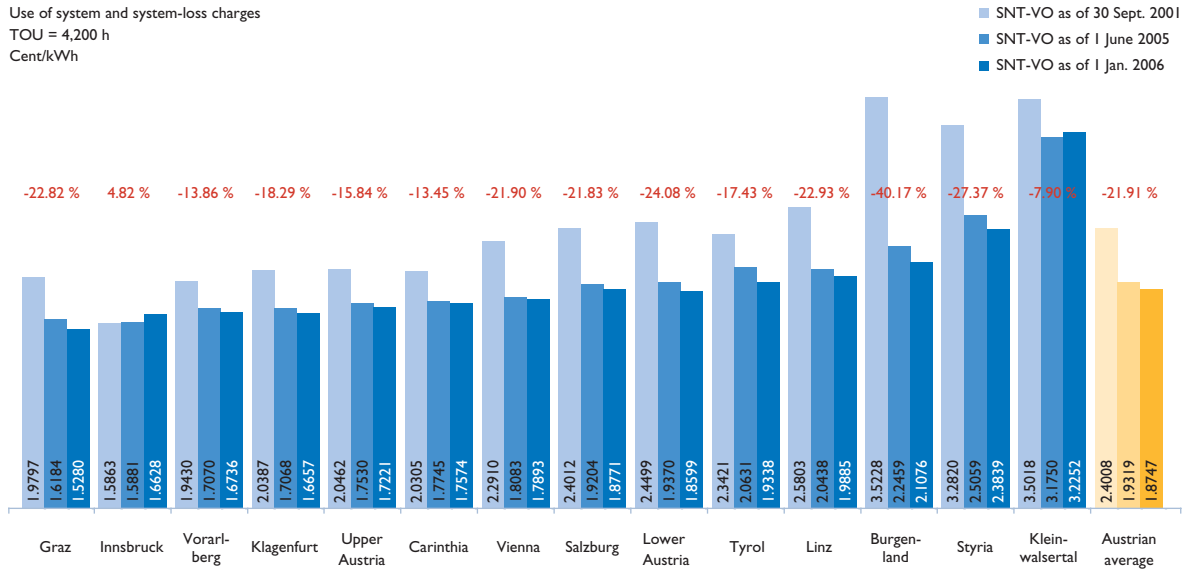


Source: E-Control

→ Use of system and system-loss charges – Grid Level 5

Chart 19

Use of system and system-loss charges
TOU = 4,200 h
Cent/kWh

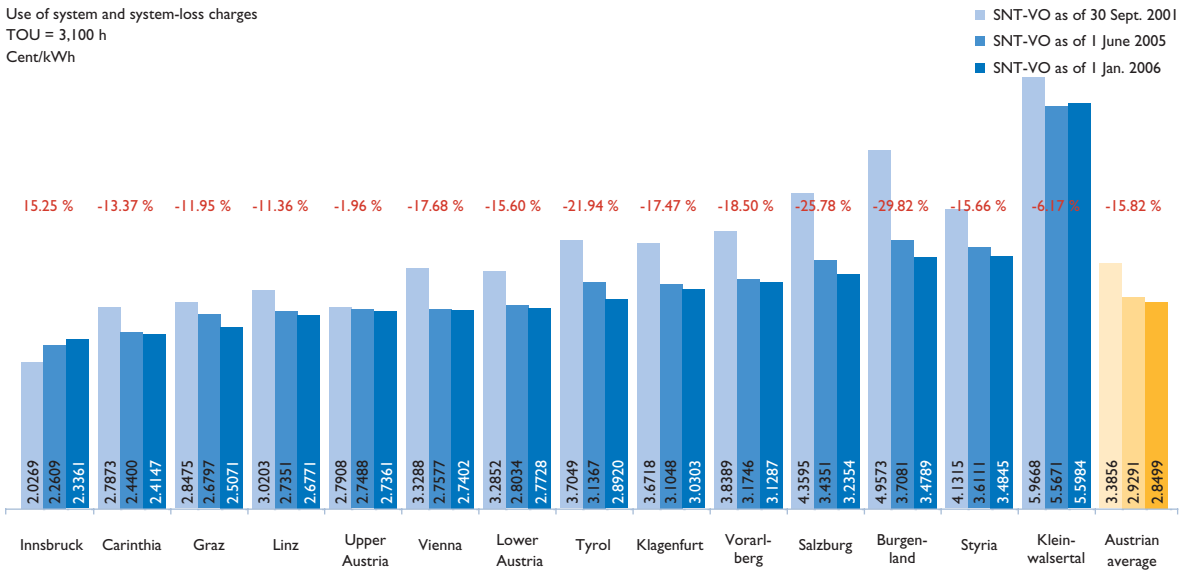


Source: E-Control

→ Use of system and system-loss charges – Grid Level 6

Chart 20

Use of system and system-loss charges
TOU = 3,100 h
Cent/kWh



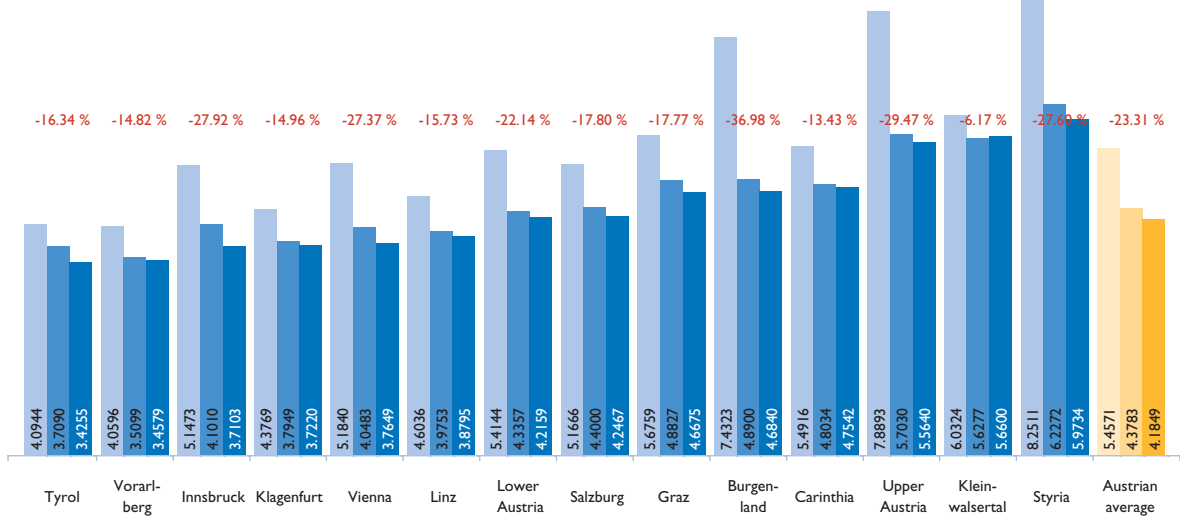
Source: E-Control

→ Use of system and system-loss charges – Grid Level 7 (interval metered)

Chart 21

Use of system and system-loss charges
TOU = 5,700 h
Cent/kWh

■ SNT-VO as of 30 Sept. 2001
■ SNT-VO as of 1 June 2005
■ SNT-VO as of 1 Jan. 2006



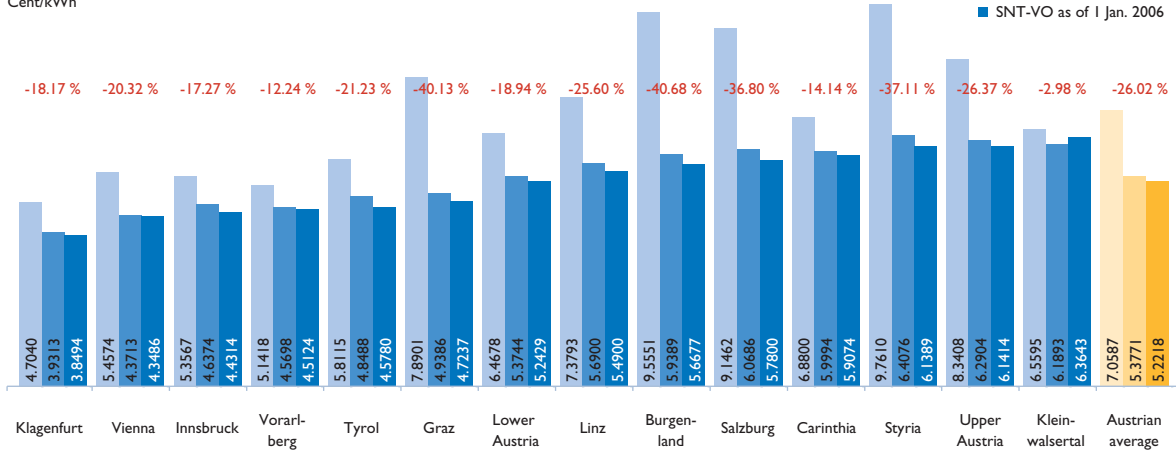
Source: E-Control

→ Use of system and system-loss charges – Grid Level 7 (non interval metered)

Chart 22

Use of system and system-loss charges
3,500 kWh
Cent/kWh

■ SNT-VO as of 30 Sept. 2001
■ SNT-VO as of 1 June 2005
■ SNT-VO as of 1 Jan. 2006

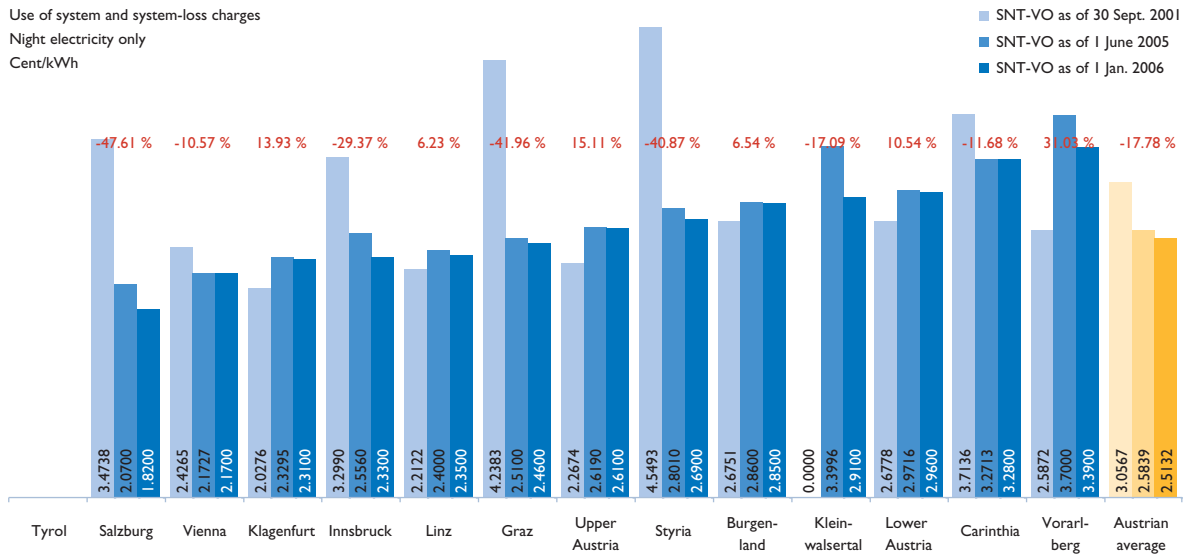


Source: E-Control

→ Use of system and system-loss charges – Grid Level 7 (interruptible)

Chart 23

Use of system and system-loss charges
Night electricity only
Cent/kWh



Source: E-Control

→ Tariff adjustments by grid zones

Table 3

Tariff adjustment per grid zone	SNT-VO Sept. 30 2001–1 Jan. 2003		SNT-VO 1 Jan. 2003–1 Nov. 2003/1 Jan. 2004		SNT-VO 1 Jan. 2004–1 Jun. 2005		SNT-VO 1 Jun. 2005–1 Jan. 2006		Total (2003 supply volume basis)	
	EUR m	in %	EUR m	in %	EUR m	in %	EUR m	in %	EUR m	in %
Burgenland	-14.59	-15.6 %	-3.89	-5.5 %	-12.52	-18.9 %	-2.36	-4.4 %	-28.7	-35.8 %
Carinthia	0.00	0.0 %	0.14	0.1 %	-15.60	-12.8 %	-1.36	-1.3 %	-16.8	-13.8 %
Klagenfurt	0.51	2.5 %	-1.38	-6.4 %	-2.46	-11.5 %	-0.40	-2.1 %	-3.8	-17.1 %
Lower Austria	-10.77	-4.1 %	-14.21	-5.6 %	-20.13	-8.1 %	-5.61	-2.5 %	-51.6	-18.8 %
Upper Austria	-12.41	-5.3 %	-9.35	-4.3 %	-23.63	-10.7 %	-3.89	-2.0 %	-49.6	-20.4 %
Linz	-4.24	-5.1 %	-2.70	-3.1 %	-11.01	-12.6 %	-2.41	-3.2 %	-22.3	-23.2 %
Salzburg	-40.61	-20.0 %	-8.42	-6.0 %	-15.15	-10.9 %	-5.91	-4.8 %	-53.7	-31.3 %
Styria	-38.99	-15.1 %	-9.90	-3.4 %	-40.45	-14.2 %	-10.00	-4.1 %	-108.5	-31.7 %
Graz	-6.03	-12.9 %	-3.36	-8.0 %	-4.79	-12.2 %	-1.58	-4.6 %	-16.8	-33.8 %
Tyrol	-3.58	-2.4 %	-8.07	-5.4 %	-11.72	-7.8 %	-8.52	-6.2 %	-32.6	-20.1 %
Innsbruck	-0.18	-0.6 %	-1.28	-4.3 %	-2.13	-7.3 %	-1.03	-3.9 %	-4.5	-14.9 %
Vorarlberg	-1.78	-2.2 %	-0.63	-0.8 %	-6.89	-9.0 %	-1.04	-1.5 %	-10.2	-13.0 %
Vienna	-26.88	-7.7 %	-16.13	-4.7 %	-29.20	-8.9 %	-5.01	-1.7 %	-79.1	-21.3 %
Kleinwalsertal	0.00	0.0 %	-0.03	-1.5 %	-0.10	-4.9 %	0.02	1.1 %	-0.1	-5.2 %
Total Austria	-159.60	-8.0 %	-79.20	-4.3 %	-195.80	-10.8 %	-49.10	-3.0 %	-478.4	-23.4 %

Source: E-Control

→ Creation of regulatory frameworks

Cross-border exchanges

In 2002 the groundwork was laid for a common international compensation system for transit costs. This was aimed at replacing the previous patchwork of import, export and transit charging schemes in the European Union with a single system. The current system, based on limited-term bilateral agreements between transmission network operators, has remained essentially the same since its introduction. It is based on determining the magnitude of transits hosted on transmission systems and costs incurred as a result of them, and allocating these costs among participants in the mechanism. However, adjustments have been made every year, and the number of participating member states has steadily risen. The most significant change was undoubtedly the abolition of export charges in 2004. With the exception of the United Kingdom, Ireland and the Baltic states, all members of the European Union as well as Norway and Switzerland now belong to the mechanism.

The EU regulation on conditions of access to the network for cross-border exchanges in electricity (Reg. No. 1228/2003), which entered into effect in June 2004, created the legal framework for a long-term system in member states. The guidelines for the implementation of a definitive system, to be adopted by the European Commission in accordance with the principles of the Regulation, have yet to be issued.

In 2005 there were new developments with regard to the allocation of scarce cross-border

capacity to market participants. At the Commission's initiative, seven regional "mini-fora" were held between December 2004 and February 2005. These meetings, attended by representatives of regulators, transmission system operators, power exchanges and the European Commission, focused on daily capacity allocation in the regions concerned. The intention is for increased harmonisation within the regions to serve as a stepping stone on the way towards a common European market. Austria was represented at the Central Eastern Europe (Austria, Czech Republic, Germany, Hungary, Poland, Slovakia and Slovenia) and Central Southern Europe (Austria, France, Germany, Greece, Italy and Slovenia, and Switzerland as an observer) fora. The Central Eastern Europe Mini-Forum was held in Vienna.

The meetings were aimed at strengthening coordination between the participating countries in each region, and follow-up discussions – some of them intensive – were held in the course of the year. E-Control and the French regulator held a public consultation of market participants on Italian cross-border congestion management, the results of which will influence further action. There have not yet been any outcomes affecting arrangements at Austria's borders. Cross-border capacity linking Austria with the Czech Republic, Hungary, Slovenia and – in the case of free capacity – Italy, is allocated by means of explicit auctions. Coordination efforts are to continue in 2006, and improved allocation procedures are likely to be introduced to facilitate electricity trade across Austria's borders.

→ Monitoring and market-oversight functions

Monitoring of unbundling

Section 10(1)(2) E-RBG (Energy Regulatory Authorities Act), BGBl I No. 121/2000 as amended by BGBl I No. 148/2002 charges E-Control with monitoring unbundling. Prior to the amendment of the EIWOG in 2004, this responsibility was largely restricted to monitoring of compliance with accounting unbundling. However, the amended EIWOG 2004, which is an enabling act, requires the provincial governments to monitor compliance with the extended unbundling provisions of the new Electricity Directive and to make the award of licences to system operators conditional on such compliance. However, this will not completely replace the ongoing monitoring activities of the regulatory authority.

The compliance officers responsible for drawing up and monitoring compliance programmes are required to submit an annual report on the steps taken to the respective provincial government concerned and E-Control, and to publish it. Since the provincial implementing legislation only began to come into force during the summer of 2005, and there is still no experience of the companies' compliance performance to draw on, E-Control's monitoring powers will presumably not take effect until 2006. In this connection readers are referred to the European Commission report on functioning of the internal market in electricity and gas, presented on 15 November 2005, in which foot-dragging by member states on the enforcement of unbundling is cited as one of the main causes for the lack of competitive pressure.

Oversight of control-area managers

In 2005 implementation of the requirements of Regulation No. 1228/2003 concerning cross-border electricity exchanges was also an important issue in terms of the regulatory oversight of control-area managers. Efforts are being made through the mini-fora and follow-up to achieve increased cross-border coordination of the identification and allocation of capacity, and of operational arrangements.

During the year, APG and TIRAG improved market transparency by introducing online information on energy imbalances in their control areas. The need to implement Regulation No. 1228/2003 and the planned congestion management guidelines will mean that achieving increased transparency remains an important task for the coming year.

Due to the continuing domestic north-south bottleneck, the control-area manager concerned, Verbund APG, had been obliged to take drastic action to manage congestion so as to maintain system stability and security of supply in southern Austria. Such action incurs considerable additional costs, set to reach up to EUR 18m for 2005. E-Control is continuously monitoring the measures taken and the costs arising from them on behalf of the E-Control Commission.

Balancing market

Considerable changes have been made to the balancing-energy system in the past year. In the Eastern control area, work began in July 2005 on implementing the refinements to the clearing price formula agreed with market participants in 2004. These are designed to prevent arbitrage between markets and send better price signals to market players. The modifications are also aimed at socialising 20% of total costs. Once introduced, the pricing scheme was monitored by the balancing-power working group on an ongoing basis. After the start-up period the new system was found to be largely fulfilling the expectations placed in it.

Another change was online publication of up-to-date system-balance information by two control-area managers, Verbund APG and TIRAG, which represents a major advance towards increased market transparency.

In 2005 the overall cost of the balancing system rose by around 30% year on year (first three quarters only). This reflected both higher wholesale prices and larger volumes of balancing energy.

Issues for discussion in coming months will be redesigning the secondary control system and achieving increased integration of neighbouring control areas.

→ Statistical activities

Both the E-RBG and the EIWOG transferred responsibility for statistical surveys and other electricity-related statistical work to E-Control (section 14 E-RBG and section 52 EIWOG). The scope of E-Control's statistical duties is established by the Ministry of Economic Affairs and Labour Electricity Statistics Order 2001 (BGBl. II No. 486/2001).

E-Control's authorisation to conduct statistical surveys in connection with the energy balance derives from the Statistics Act 2000, section 5(1) of which permits statistical surveys relating to energy while section 8 confers corresponding powers on the ministry.

E-Control's statistical surveys thus both contribute data to the Austrian energy balance, pursuant to the Statistics Act 2000, and provide information on the liberalised electricity and gas markets on the basis of the powers assigned to it by the EIWOG and the Natural Gas Act.

E-Control fulfils its statutory mandate by collecting, processing, validating, evaluating, analysing and publishing data. The information is posted on our website, and efforts are made to publish both the monthly and the annual results as quickly as possible. For the first time, we succeeded in publishing both the annual balances and the capacity data as of 31 December 2004 within the first half of 2005.

→ Activities under the Energy Emergency Powers Act 1982

Under section 11 EnLG (Energy Emergency Powers Act) 1982, E-Control is responsible for the “preparation and coordination of ... measures to be taken if the need arises” to safeguard the security of electricity supplies. E-Control is empowered to order the reporting of such data as is required for the preparation of emergency measures.

The scope of these surveys is defined by the Energy Emergency Data Order. Their contents were adjusted by an amendment to the order in December 2003 (published in the official gazette supplement of the Wiener Zeitung on 15 December 2003).

In 2005, E-Control paid particularly close attention to two areas of importance for the preparation and assessment of emergency control measures, namely the influence of temperatures on electricity demand, and the availability of storage and thermal power station capacity. The impact of seasonal factors – especially temperatures – on consumption is not only significant in terms of crisis management but is also of interest to market participants. Because of this the investigation was extended to the gas industry and the results were made available in the form of a working paper.

The findings of the availability study are to be discussed with the bodies in responsible for implementing emergency measures, as well as industry representatives and academics, after which the results will be published.

→ Austrian failure and outage statistics for 2004

The failure and outages surveys, which have been carried out by E-Control since 2002, have shown the reliability of supply in Austria to be excellent.

The survey, pursuant to the Statistics Order, was conducted in cooperation with the system operators and the VEÖ. As in 2003, the 2004 survey achieved 100% coverage, that is, it included all the Austrian system operators.

Electricity supply reliability is determined, among other factors, by the condition of the distribution networks. The age of the networks and the quality of the maintenance performed by the operators have a significant influence on reliability. In 2004, mean non-availability (the average duration of scheduled and unscheduled supply interruptions) per connected load was 51.02 minutes/year. This was roughly equal to the length of the power failures per customer during the year. Comparison of non-availability with system availability over the year (number of hours) shows the availability ratio to have been 99.99%, as it was in 2002 and 2003.

Mean non-availability related to unscheduled interruptions, e.g. outages caused by snow or lightning, was 30.33 mins/y (see Chart 24). Annual variations in unscheduled non-availability are partly explained by atmospheric influences (e.g. the frequency of lightning, snow and storms), longer supply restoration times, as well as measures taken to improve system reliability

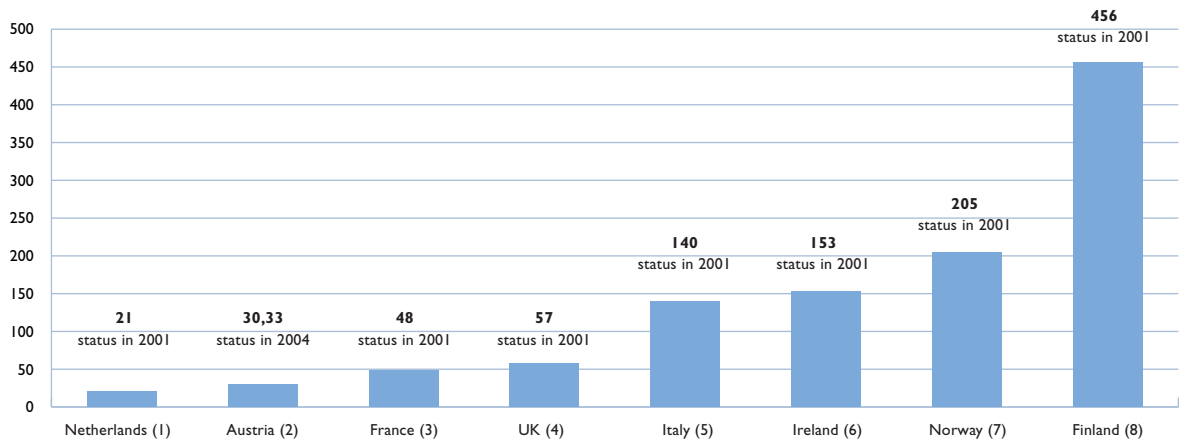
(e.g. maintenance and investment). The latter can have a positive effect on supply reliability.

The figures presented in Chart 24 confirm other failure and outage statistics, which show that supply reliability in Austria compares very well with the rest of Europe, and that it is one of the countries with the fewest power failures.

→ Annual “unplanned” non-availability of electricity supply in European countries

Chart 24

Non-availability
(minutes per year)



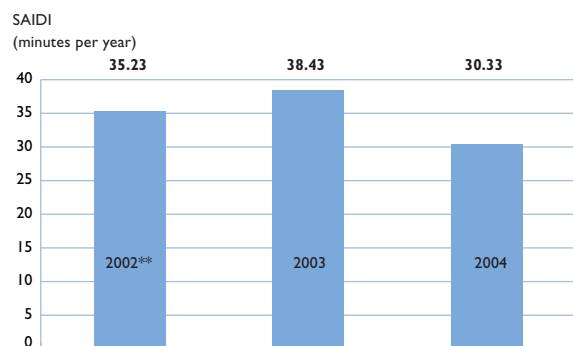
(2) SAIDI, status in 2004: unplanned supply interruptions per load, medium voltage
Source: E-Control

(1), (3)–(8) status in 2001: unplanned supply interruptions in minutes lost per customer per year, medium voltage
Source: Second Benchmarking Report on Quality of Electricity Supply, Sept. 2003

Chart 25 shows the annual unplanned non-availability of electricity supply in Austria in 2002, 2003 and 2004. It should be noted that the effects of the floods in 2002 were not included in these calculations and the survey that year only encompassed 84.1% of customers supplied.

→ **Annual “unplanned” non-availability of electricity supply in Austria*** in 2002–2004

Chart 25



* Due to unplanned supply interruptions on the medium-voltage network (> 1 kV to 36 kV; SAIDI: voltage basis)
 ** excluding floods, survey coverage 84.1%

Source: E-Control

→ **Studies and reports**

Green power report

Section 25 Green Electricity Act requires E-Control to submit annual reports to the Minister of Economic Affairs and Labour reviewing attainment of the objectives of the Act and changes that have taken place as compared to previous years. These reports may include recommendations for improving or adjusting the support mechanisms and other arrangements provided for by the Act.

The objectives of the Green Electricity Act are:

- Attainment of the 78.1% target established by EU Directive 2001/77/EC;
- A supply contribution from “other” green power of at least 4% by 2008;
- A supply contribution of 9% from small hydro power by 2008;
- Efficient use of the resources available to support renewable generation and compliance with the 0.22 cent/kWh cap on the cost burden imposed by “other” green power (can be raised by order as from 2005) and the 0.16 cent/kWh ceiling for small hydro (both limits apply to power supplied to end-users from the public grid);
- A focus on technologies capable of becoming commercially competitive, and
- Investment certainty for existing and future capacity.

In 2005 some 3.5 TWh of green power from small hydro generating stations and 2.2 TWh of “other” green power was injected into the public grid and compensated (Table 4). Injection tariffs totalled around EUR 369m, of which EUR 207m was allocated to “other” green power. These figures represent an increase of 300 GWh or 6% compared to 2004. Injection tariff payments also rose, by EUR 67m or 22%.

The supply contribution of “other” green power is expected to reach 7–7.5% by 2008, well above target. In order to reach the 9% small hydro-power target, a further 400 GWh will be needed in addition to projects already notified. In its report pursuant to section 25 Green Electricity Act, E-Control made the following recommendations for attaining the objectives of the Act in terms of competitive generating costs and advancing the technologies concerned to commercial maturity:

- Optimum exploitation of remaining hydro-power potential;
- Continued financial support for small hydro, with special emphasis on investment in increasing power yields;
- Support for medium hydro where necessary for economic operation;
- Increased action to promote demand-side energy efficiency;
- No blanket support for grid-connected capacity with generating costs of over 10 cent/kWh;
- Limitation of wind-power developments to optimum sites (by international standards);
- Green-power marketing by plant operators in place of the current compulsory allocation system;
- Priority for biomass use for materials and heat production;
- Limitation of support payments to absolutely necessary levels;
- Administrable budget control.

→ Green-power withdrawals and compensation payments in 2004 and 2005

Table 4

	2004		2005	
	Injection volume in GWh	Net compensation in €m	Injection volume in GWh	Net compensation in €m
Small hydro	3,995	174.48	3,554	161.96
“Other” green power	1,444	127.98	2,200	207.56
Wind	924	71.42	1,316	102.00
Solid biomass inc. HBF waste	313	28.67	554	58.83
Biogas	102	12.80	219	29.09
Liquid biomass	18	2.30	33	4.67
PV	12	7.54	13	8.35
Landfill and sewage gas	74	5.06	64	4.44
Geothermal	2	0.18	2	0.18
Total small hydro and “other” green power	5,439	302.46	5,754	369.53

Source: Reports from green-power balancing-group representatives, preliminary figures as of January 2006

Combined heat and power generation

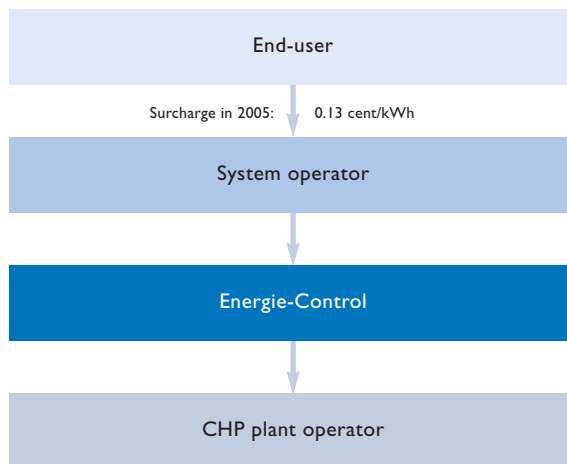
As in the previous two years, E-Control specialists were commissioned by the Ministry of Economic Affairs and Labour to prepare reports on support for combined heat and power (CHP) plants under sections 12 and 13 Green Electricity Act. A total of 40 such expert witness reports were prepared for the Ministry in 2005.

Most concerned support applications from operators of CHP plants. The main focus was evaluating the cost of, and revenues required for continued operation in accordance with section 13(1) Green Electricity Act. The administration of the CHP subsidy system was another important task performed by E-Control (Chart 26).

On the basis of the final ministry notices concerning CHP subsidies for 2003 and 2004, any outstanding subsidies were disbursed and demands for reimbursement of overpayments issued. In accordance with the Ministry of Economic Affairs and Labour CHP Surcharge Order 2005, support contributions were levied on system operators and disbursed to CHP plant operators on the basis of the preliminary notices for 2005.

→ CHP support scheme

Chart 26



Source: E-Control

Power labelling and certificates of origin

Under sections 45 and 45a EIWOG, electricity merchants supplying end-users in Austria are obliged to identify the source of the power. Power labelling discloses the proportions of the power accounted for by the various primary energy sources in a given period (calendar or financial year).

E-Control is the power labelling watchdog under section 45(2) EIWOG, and in May 2005 we initiated extensive checks of the information provided by electricity suppliers. The 2005 power labelling report contains an overall assessment of compliance with the requirements (regarding the accuracy of the data and disclosures and the presentation of the information, etc.), as well as appraisals of compliance by the nine provincial utilities and suppliers whose power mix is made up entirely of renewable energy.

Apart from evaluating the performance of individual suppliers, we used the data available to us to compute an “Austrian power mix”. This gives an approximate breakdown for 2004. Precise percentages could not be calculated for the year, as electricity suppliers can choose between basing the disclosures on the calendar or financial year, meaning that there is no point in time when the total amount of energy supplied is accounted for. Table 5 compares the “Austrian power mix” with various production statistics.

Table 6 compares the “Austrian power mix” with the power labelling disclosures of the nine provincial utilities and the renewable suppliers.

In most cases, certificates of origin in the meaning of section 8 Green Electricity Act are used to evidence power sources; these must be issued by system operators at the request

→ Comparison of the “Austrian power mix” 2004 with production statistics

Table 5

	in %			
	UCTE international production statistics, 2004 ¹	UCTE production statistics for Austria, 2004	Total electricity supply, 2004	Austrian power labelling, 2004
Renewable energy sources			65.58	58.79
Hydro power			60.96	56.37
Other renewable energy sources (wind, biomass, PV, geothermal, lye, etc.)	13.00	60.82	4.63 ²	2.42
Fossil fuels	54.40	39.18	34.42	26.17
Nuclear energy	32.60	-	-	-
Other energy sources	-	-	-	0.49
Electricity of unknown origin	-	-	-	14.55
Total	100.00	100.00	100.00	100.00

¹ Most of Europe

² Including lyes and sewage sludge used for autogeneration

Source: E-Control

61

→ Overview of power labelling disclosures by the provincial utilities in 2004

Table 6

Company	Renewable energy sources	Fossil fuels	Nuclear energy	Other	UCTE mix ¹	Total
Austrian electricity labelling 2004	58.79 %	26.17 %	0.00 %	0.49 %	14.55 %	100.00 %
BEWAG Energie Vertrieb GmbH & Co KG*	100.00 %	0.00 %	0.00 %	0.00 %	0.00 %	100.00 %
Energie AG Oberösterreich Vertrieb GmbH & Co KG*	67.73 %	23.80 %	0.00 %	0.17 %	8.30 %	100.00 %
Energie Graz GmbH & Co KG	40.49 %	29.76 %	0.00 %	0.00 %	29.76 %	100.00 %
EVN Energievertrieb GmbH & Co KG*	46.53 %	50.97 %	0.00 %	2.50 %	0.00 %	100.00 %
Innsbrucker Kommunalbetriebe AG	61.65 %	4.87 %	0.00 %	0.00 %	33.48 %	100.00 %
KELAG Kärntner Elektrizitäts-AG	61.68 %	0.55 %	0.00 %	0.35 %	37.42 %	100.00 %
Linz Strom Vertrieb Nfg GmbH & Co KG*	42.67 %	51.43 %	0.00 %	0.00 %	5.90 %	100.00 %
Salzburg AG für Energie, Verkehr und Telekommunikation	79.94 %	11.01 %	0.00 %	0.00 %	9.05 %	100.00 %
STEWAG-STEG GmbH	47.29 %	25.58 %	0.00 %	0.00 %	27.13 %	100.00 %
TIWAG-Tiroler Wasserkraft AG	66.72 %	0.00 %	0.00 %	0.00 %	33.28 %	100.00 %
Vorarlberger Kraftwerke AG	63.70 %	0.00 %	0.00 %	0.00 %	36.30 %	100.00 %
Wien Energie Vertrieb GmbH & Co KG*	41.44 %	58.56 %	0.00 %	0.00 %	0.00 %	100.00 %

* Labelling period different from calendar year

¹ whereof 13% RES, 54.4% fossil fuels and 32.6% nuclear (“UCTE mix” in 2004)

Source: E-Control

of renewable generating-station operators. Certificates of origin contain information about the characteristics (primary energy sources, maximum electric capacity and output) of the power stations and the energy they produce. They have been issued in Austria since 2003. Some certificates are still issued on paper, but the vast majority are now processed by a central database.

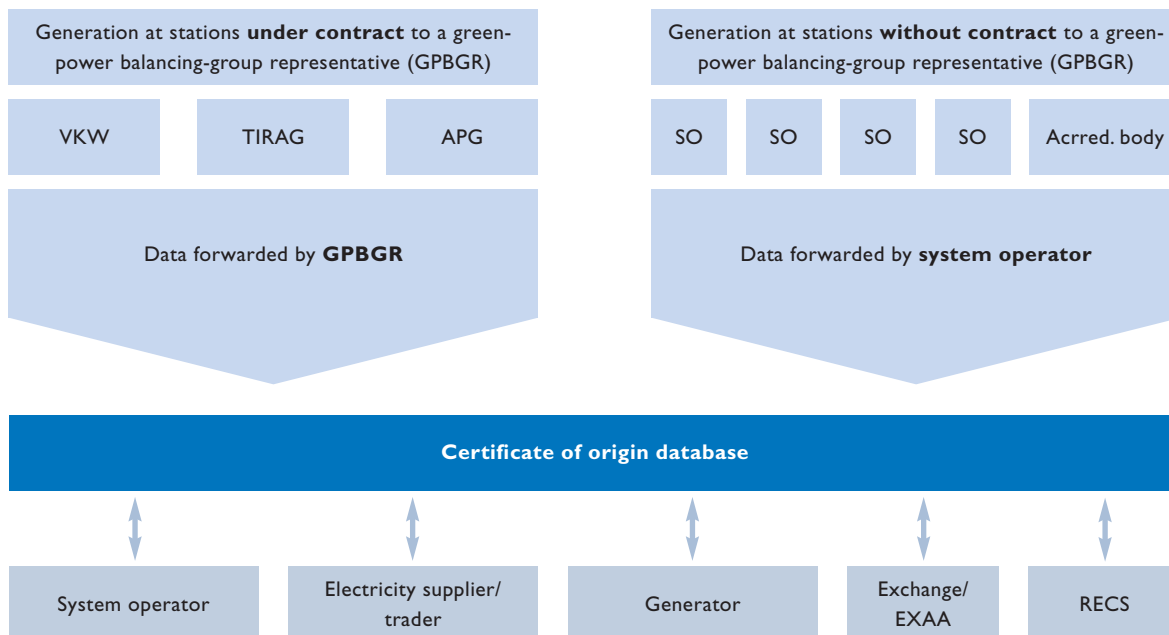
This is managed by E-Control and is voluntarily used by system operators. It is also used to handle data relating to all supported green power (“other” green power and small hydro

power). Chart 27 shows how the certificate database system works.

The database can also be used to manage information on generating stations that use fossil fuels (and as such are not entitled to receive certificates of origin). Thus, the entire information chain from generation through to trading and consumption can be stored in the database for power labelling purposes. The system is highly reliable and transparent, and plays a major part in the high standard of power labelling in Austria.

→ Issuing of certificates of origin via the certificate database

Chart 27



Source: E-Control

Decentralised power generation in Austria

In order to understand the pros and cons of decentralised generating stations, it is first necessary to define the term. Decentralised generation comprises generating stations that are connected to public medium- and low-voltage distribution systems and are close to the point of use, as well as all stations that generate power for their own use. In 2005, E-Control conducted a study into decentralised electricity generation in Austria. Decentralised generation raises important issues with regard to network costs and security of supply.

Due to the climate and topography of Austria a high proportion of its electricity comes from hydro-power generation. There is also a significant amount of generation from thermal power stations (fired by gas, coal, biomass and biogas) and wind farms (which were responsible for 2–3% of all Austrian electricity output at the time of the study).

Due to the impact of technological and legislative changes on the structure of generating capacity, power is increasingly being injected to all grid levels. In other words, generation is decentralised, as depicted by Chart 28.

The advantages of decentralised generation include:

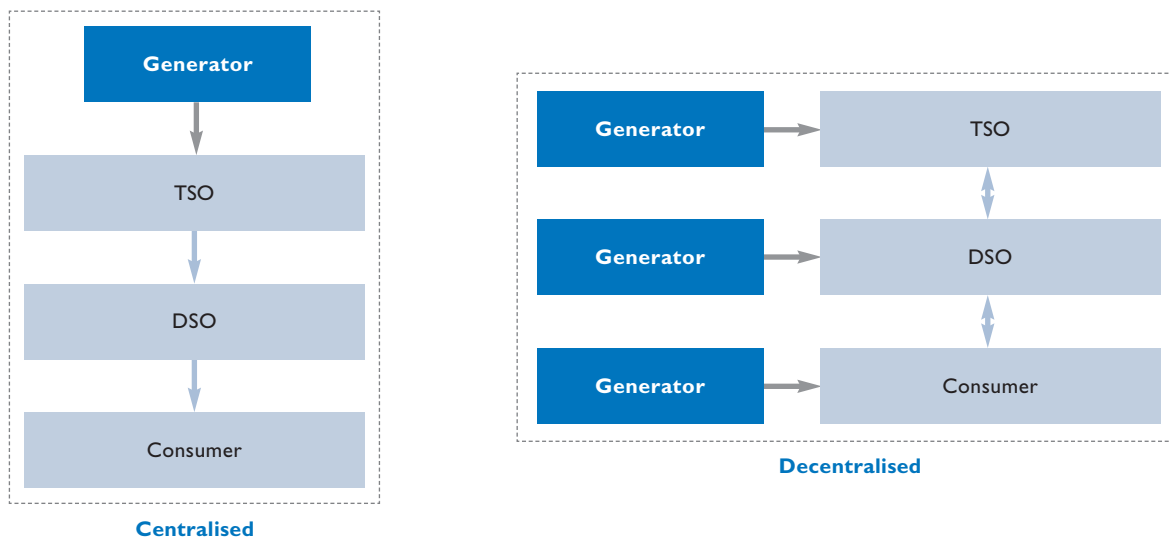
- Smaller stations and hence easier construction;
- Use of local primary energy sources;
- Faster approval and construction; and
- Use of the power to meet local demand.

Among the disadvantages of decentralised generation are:

- The lower efficiency of many small power stations; and
- Higher unit investment and maintenance costs.

→ Centralised versus decentralised generation

Chart 28



Source: E-Control

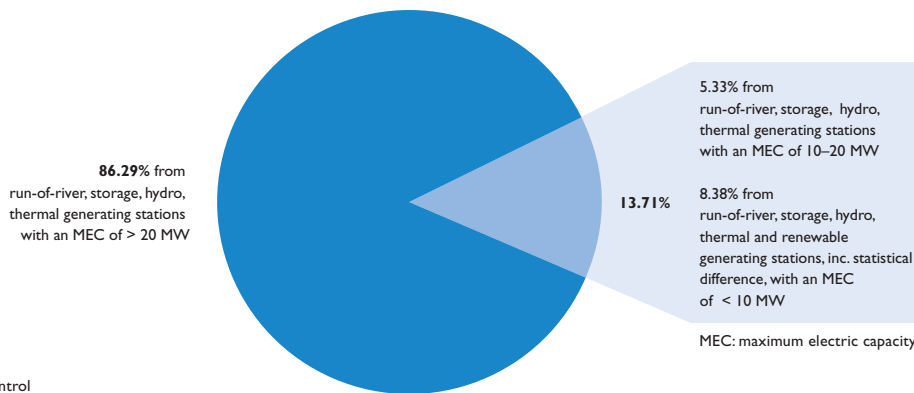
The number of decentralised generating stations has risen steadily in the past few years. This is expected to continue due to the existing operating environment (support for renewable generating plants and technological improvements). By 2003 around 14% of Austrian electricity output was being sourced from decentralised generating stations (see Chart 29)

As part of the study, the impact of decentralised power generation on network costs was investigated, using three scenarios to ask:

1. What would the system requirements and system losses in Austria be if there were no decentralised generating stations?
2. What are they at present, with the current supply contribution from decentralised power plants?
3. What would be the effects of further expansion, resulting in a 7% contribution from supported green power (wind, biomass and biogas) by 2010?

→ **Percentage contributions to annual electricity output in Austria in 2003, by maximum electricity capacity**

Chart 29



Source: E-Control

The results of the comparison showed that although the addition of new decentralised power plants often affects the amount of electricity withdrawn from higher grid levels, it only has a very minor impact on total network costs. Decentralised power generation can lead to a temporary reduction in grid losses and thus a (local) reduction in costs. However, these savings are at least partially negated by higher costs at times when locally generated electricity cannot be consumed locally and must be transported to other locations.

Growing numbers of decentralised power stations have little or no effect on the demands on electricity networks in terms of reliability and availability. The amount of network capacity needed will not be reduced by the rapidly increasing number of decentralised generating stations, and network expansion to meet demand growth will continue to be necessary. This applies to the low, medium, high and ultra high voltage grids alike. The study thus clearly refutes suggestions that decentralised power generation helps relieve network loading, or would actually make it unnecessary to expand the 380 kV grid.

As decentralised generation is harder to plan and cannot be centrally managed, if anything expansion will increase the need for 380 kV lines.

The influence of decentralised generating stations on system operation was also investigated. When considering the effect of expansion on system operation, the need for standby capacity, reactive power management, system losses and voltage fluctuations must all be taken into account. The study includes detailed findings on these factors, including their implications for network connections.

Decentralised generating stations will be responsible for a considerable proportion of Austrian and European electricity supplies. However the expansion of decentralised generation will have little influence on network expansion and costs. It is unlikely to bring most of the benefits that are often anticipated from it (lower system costs, network downsizing and self-sufficient supply areas) unless security of supply is compromised.

This study and the annexes to it are posted at www.e-control.at/.

→ Long-term forecast

The past few years have been marked by very rapid electricity demand growth. Total domestic electricity consumption excluding pumped storage grew by 3.4% in 2003 and by 3% in 2004, and is now 64,776 GWh. In 2005, WIFO (the Austrian Institute for Economic Research) published new energy demand scenarios up to 2020.¹⁰ These evidently reflect the aforementioned demand growth and the energy balances published by Statistics Austria.

The recalculated scenarios are now on either side of average absolute annual demand growth over the 1990–2003 period (“90s Moving Average” scenario: 1,380 GWh/year).¹¹ The large annual increases of 2.7% between 2010–2020 in the baseline scenario are striking. If the projected 2.3% growth from 2003–2010 were to continue, by 2020 consumption would be some 4,000 GWh lower. A WIFO forecast made in

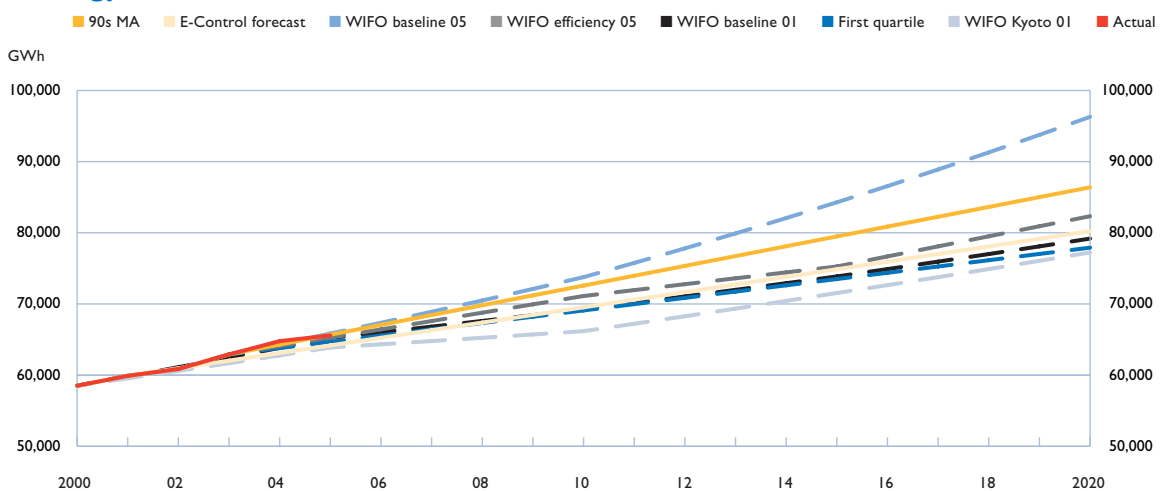
2003 for the period up to 2011, commissioned by E-Control (E-Control projection: 1,070 GWh/year), is close to the new “energy efficiency” scenario.

However, in E-Control’s view there are reasons to expect absolutely constant growth. Up to 2000, annual growth rates fluctuated between 1,000–1,170 GWh in absolute terms, but without a clear percentage trend since 1976. In the past few years however, annual growth has risen to more than 1,200 GWh. Whether this actually represents a break in the trend or is merely a short-term bunching of high growth rates is hard to say at present.

Translation of the results yielded by the “90s Moving Average” scenario into generating capacity required shows that existing capacity in Austria will be sufficient for peak loads until around 2015.

→ Energy demand scenarios

Chart 30



Source: E-Control

¹⁰ K. Kratena and M. Wüger, Austrian Energy Scenarios up to 2020, Austrian Institute for Economic Research, 2005.

¹¹ The changes in 1992 and 1993 were treated as outliers and were excluded from the calculation.

→ Stranded costs

Commission decision SG (2001) D/290567 of 25 July 2001 permitted the payment of state aid to Austrian generators to compensate them for stranded costs. The decision distinguishes between two eligibility categories – support for the Voitsberg 3 brown-coal power station and for domestic hydro-generating stations. Hydro need not be discussed here, as this form of state aid has not been implemented in Austria to date. The stranded costs recognised in respect of the Voitsberg 3 station total EUR 132.61m.

Collection of this amount began on 19 February 1999 and is due to expire on 30 June 2006. Section 13 E-RBG assigns responsibility for collecting, administering and disbursing the stranded costs contributions to E-Control.

The funding mode for the period from 19 February 1999 to 30 September 2001 under the first Stranded Costs Order (BGBl II No. 52/1999) differed from that under the amended order (BGBl II No. 354/2001) for the period from 1 October 2001 to 30 June 2006.

Period from 19 February 1999 to 30 September 2001:

Constitutional Court verdict V 3/04 of 11 June 2004 overturned section 10(1) Stranded Costs (Amendment) Order of the Minister of Economic Affairs and Labour. This is the provision that governed the collection of contributions for the period from 19 February 1999 to 30 September 2001. Thereafter the court's verdicts of 6 October 2004 struck down the assessment notices for stranded costs contributions based on these arrangements. The subsequently amended section 10 Stranded Costs (Amendment) Order (BGBl II No. 311/2005) clarified the matter: for the period 19 February 1999 to

30 September 2001, only those companies which were eligible customers or suppliers of such customers were obliged to pay stranded cost contributions. The guidance notes to the order state that E-Control must return any contributions levied from non-eligible customers.

Following a careful investigation, an amount of EUR 2.78m has already been paid back to system operators which were not eligible customers as of 30 September 2001. Before the repayments were made, E-Control ascertained whether the companies concerned had supplied any eligible customers during the period in question. Taking the repayments made in 2005 into account, a total of EUR 46.31m in stranded cost contributions was levied for the period 19 February 1999 to 30 September 2001 and disbursed to the beneficiary companies.

Period after 1 October 2001:

From 1 October 2001 onwards, the basis for the assessment of contributions was the Stranded Costs (Amendment) Order of the Minister of Economic Affairs and Labour. Applications for annulment of the funding arrangements in place from 1 October 2001 were rejected.

On 1 January 2003 the contributions ceased being calculated by system operators themselves and began being collected by E-Control on the basis of the previous year's supply volumes. This system was retained in 2005. Disbursements to beneficiaries are made in accordance with the funds paid in on the 15th day of the second month after the end of the respective quarter.

E-Control has collected the following contributions, in accordance with the Stranded Costs (Amendment) Order and disbursed them to the beneficiaries.

→ **Amounts collected and disbursed under the Stranded Costs (Amendment) Order**

Table 7

Collected in 2002	€ 23.60m
Collected in 2003	€ 19.43m
Collected in 2004	€ 19.97m
Collected in 2005	€ 15.03m
TOTAL collected	€ 78.03m
Payments to beneficiaries in 2002	€ 15.53m
Payments to beneficiaries in 2003	€ 15.52m
Payments to beneficiaries in 2004	€ 21.73m
Payments to beneficiaries in 2005	€ 19.46m
TOTAL payments	€ 72.24m

Source: E-Control

The total contributions payable under the amended order up to the end of 2005 amounted to EUR 83.41m. Of the outstanding payments (EUR 5.40m) some EUR 5.0m were accounted for by the instalment for the fourth quarter of 2005 of which fell due at the start 2006.

Taking into account repayments of EUR 2.78m made to system operators, since 19 February

1999 a total of EUR 124.31m has been levied from liable companies, EUR 121.33m of which has already been disbursed to beneficiaries. The outstanding amount of EUR 8.30m still needed to reach the total recognised stranded cost contributions (EUR 132.61m) is expected to be collected from system operators and passed on to the beneficiaries by the summer of 2006.



Developments on
the gas market 2005



→ **Developments on the Austrian gas market**

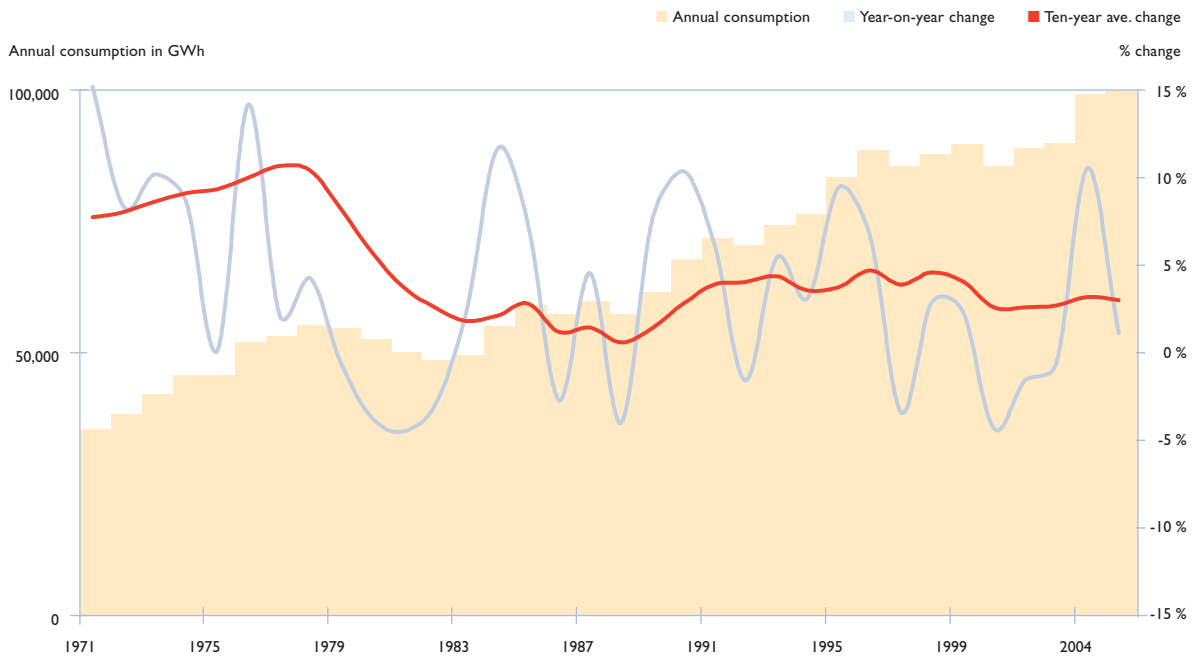
A total of approx. 8.6 bn normal cubic metres (N cu m) or 95.0 TWh of natural gas were supplied to end-users in the 2004 calendar year – an increase of 0.4% on 2003. For statistical purposes, end-users are all consumers who withdraw natural gas from the network to meet their own needs, meaning that they include households, businesses and power stations. There was a striking slowdown in demand growth after the sharp increase in 2003 (see Chart 31). This was probably mainly due to a decline in the use of gas-fired generating stations, whose gas procurement fell back somewhat in 2004, having risen by more than

20% in 2003. Another important factor was the heating demand by small consumers, which differed greatly between the two years. If these influences and the leap-day are stripped out, demand growth is seen to have been 2.8% in 2004 compared to 0.7% in 2003.

During the first three quarters of 2005, final consumers were supplied with 68.3 TWh or 6.2bn N cu m of gas – a year-on-year increase of 4.0 TWh/approx. 0.4bn N cu m or 6.2%. February, June and July witnessed above average growth rates, while average or near-average growth was recorded in March, August and September, and demand fell in January, April and May. Underlying demand growth, adjusted for the leap-day in 2004, power station demand

→ **Natural-gas demand, domestic-gas consumption and rates of change, 1971–2005**

Chart 31



Source: E-Control

and temperature-related fluctuations, was only 1.2% in the first nine months of the 2005 calendar year.

Domestic demand growth of approx. 4 TWh was met by a rise of 13.4 TWh in net imports offset by a drop of 9.4 TWh in domestic supply. Salient features of the period were a 2.7 TWh decline in domestic production and a 6.2 TWh increase in imports. Exports were down by 7.3 TWh, and injection into storage was up by 7.4 TWh year on year.

By the end of September there was 7.5 TWh or 0.7% more gas in storage, boosting the percentage full by almost a quarter to 88% – the highest level since liberalisation in October 2002.

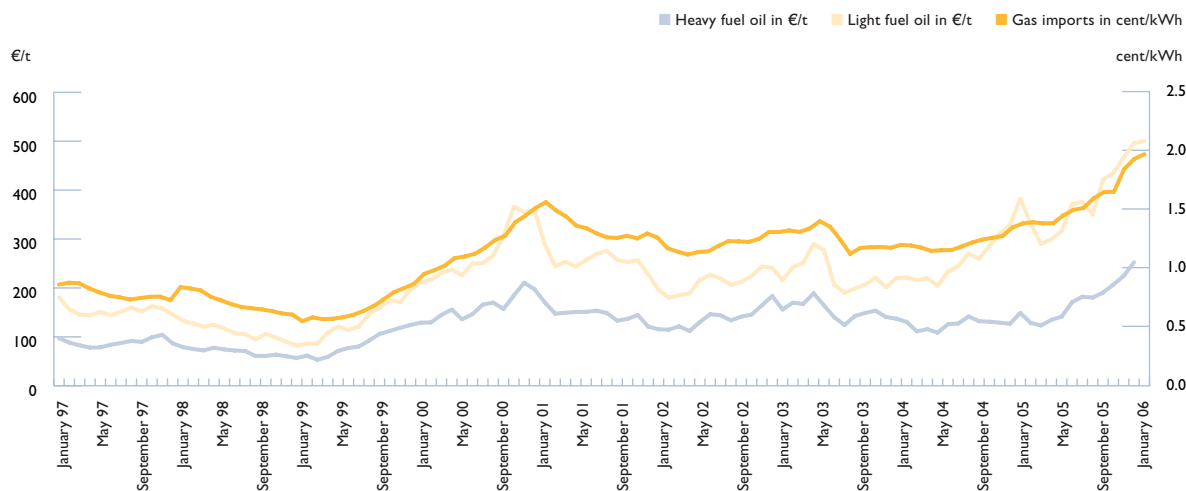
→ Import-price trends

In order to maintain the competitiveness of natural gas, the price formulas of most long-term take-or-pay import contracts have two components:

- A so-called “netback price” reflecting competition from other energy forms (i.e. the prices of rival products, differences in investment and operating costs, and surcharges recognising the advantages of gas in terms of lower emissions, among other components.)
- Indexation of this base price to international energy prices; these price movements are mirrored in the gas import price with a time lag of three to six months.

→ Comparison of Austrian gas-import prices (cent/kWh) with those of oil products (€/t) since 1997

Chart 32



Sources: Statistics Austria (gas) and Platt's Oilgram (oil)

E-Control has developed a model, based on gas import data published by Statistics Austria and world oil price trends, which makes it possible to track past price movements and forecast near-term gas import prices. The charts generated by the model are posted on the E-Control website and are regularly updated.

A comparison of the Austrian gas border price with international heating oil quotations reveals a delayed response of gas prices to changes in the prices of competing energy products (see Chart 32).

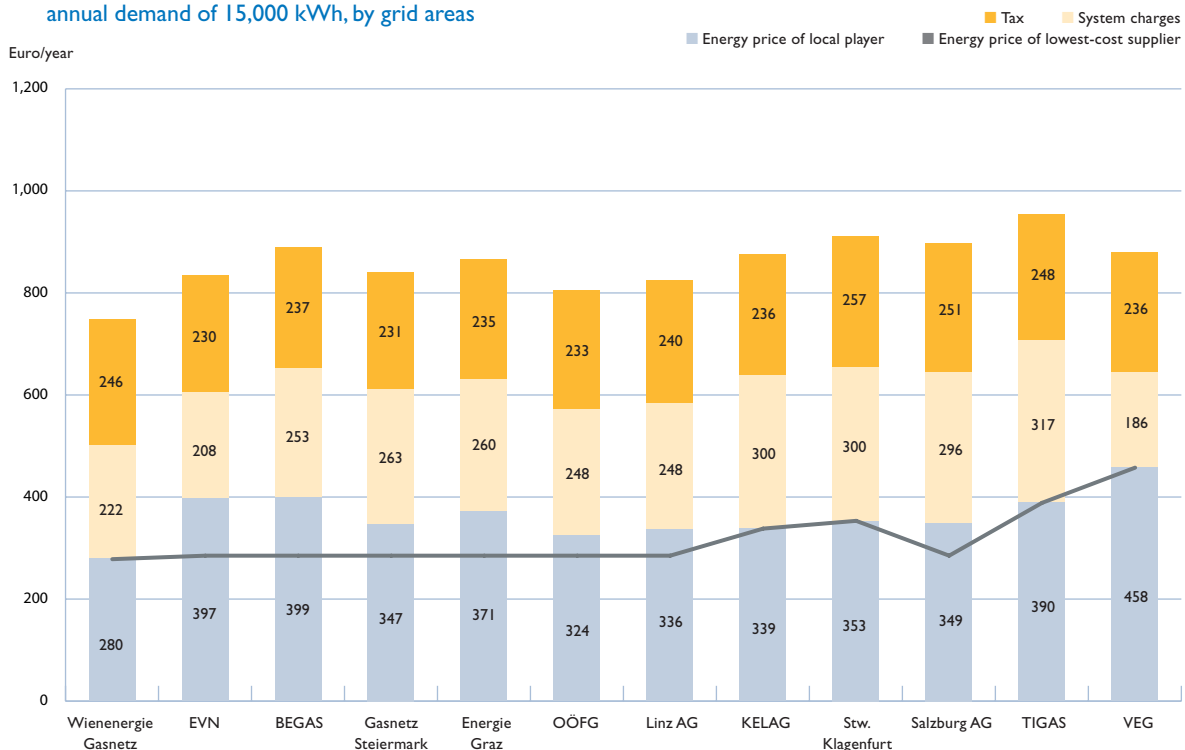
→ Retail prices

The steady rise in energy prices between January and September 2005 meant that the average gas border price in 2005 was probably almost 40% up on 2004. In the autumn and winter of 2005, gas suppliers reacted with further increases in their energy prices of between 20–30% (compared with autumn 2004), or in isolated cases even 40%.

Chart 33 shows the current total current spending on gas (euro/year) of an average domestic consumer in different grid zones.

→ Overall gas prices paid by typical tariff consumers annual demand of 15,000 kWh, by grid areas

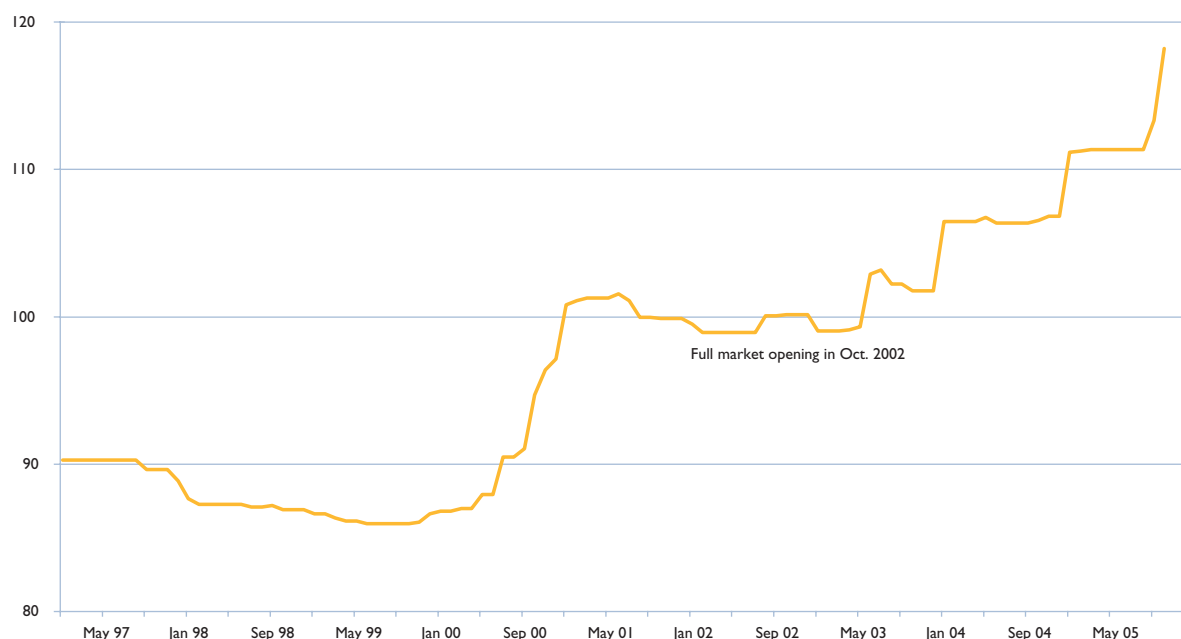
Chart 33



Source: E-Control, status January 2006

→ Gas CPI (Oct. 2002 = 100)

Chart 34



Source: Statistics Austria

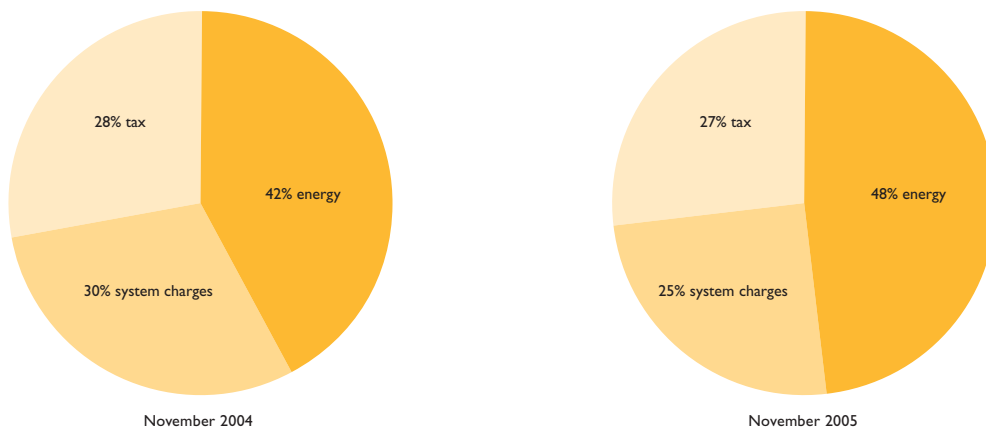
Gas prices are likely to stabilise at high levels this winter (2005/2006). The sharp fall in international oil prices in October and November 2005 appears to have been a short-lived phenomenon and there was a slight upturn from the start of December.

Despite further reductions in gas system charges imposed by the E-Control Commission in November 2005, total household expenditure on gas will have been considerably higher in

2005 than in 2004. The shift between the energy and system charges price components becomes obvious when one compares the percentage breakdowns of an average household's gas costs in 2004 and 2005 (see Chart 35). The graph compares the proportions of the price paid by an average domestic consumer in Lower Austria (demand 15,000 kWh/year) accounted for by energy and system charges in November 2005 and November 2004).

→ **Breakdown of the gas price paid by an average household (15,000 kWh/year) in November 2004 and November 2005**
example of the provincial utility in Lower Austria

Chart 35



Source: E-Control

Gas-price comparisons

The industrial price survey for the reference month, January 2005, was carried out between March and May 2005. Some 718 questionnaires were sent to Austrian industrial companies with an annual demand of more than 1,107,000 kWh, eliciting a response rate of 32.2% (231 responses, 140 of them analysable), yielding statistically significant price information. Compared with the previous year, energy prices have risen by an average of 13.1%.

Companies were divided into three categories according to their levels of consumption. Those in category A showed an arithmetical mean of 1.44 cent/kWh, with a standard deviation (scatter) of 0.25 cent/kWh. Both the average

prices and the scatter in absolute terms (cent/kWh) were higher for the two categories with lower demand (B and C).

The median and the first and third quartiles were calculated for the entire study. The median – the middle value in an ascending order of averages – for the entire sample was 1.68 cent/kWh. Some 75% of customers pay more than 1.57 cent/kWh and 25% pay more than 1.90 cent/kWh. The spread of quartile values shows clearly that the difference between the median and the upper quartile is much greater than that between the median and the lower quartile. For consumers this means that it is relatively difficult to find a price significantly lower than the median (1.68 cent/kWh), and

some must pay considerably higher prices. The average contract term has a major influence on the energy price. Due to liberalisation, consumers can strengthen their position by negotiating shorter terms.

The next survey took July 2005 as the reference month and was expanded to include points such as baseload as a proportion of the total load, and the number of sites involved.

→ Results of the 2004 and 2005 industrial price surveys

Table 8

	Measure	2005 in cent/kWh	2004 in cent/kWh
Category A: Annual consumption > 100,000,000 kWh	Arithmetical mean	1.44	1.33
	Standard deviation	0.25	0.16
	No. of companies,	13	16
	Ave. contract term	38 months	-
Category B: Annual consumption > 10,000,000 kWh < 100,000,000 kWh	Arithmetical mean	1.67	1.53
	Standard deviation	0.30	0.45
	No. of companies,	51	31
	Ave. contract term	33 months	-
Category C: Annual consumption < 10,000,000 kWh	Arithmetical mean	1.93	1.74
	Standard deviation	0.39	0.31
	No. of companies,	76	17
	Ave. contract term	47 months	-
Total	Arithmetical mean	1.79	1.58
	Standard deviation	0.38	0.42
	Median	1.68	1.58
	First quartile	1.57	1.33
	Third quartile	1.90	1.77
	No. of companies, Ave. contract term	140 40 months	69*

* Five companies could not be assigned to any consumption category

Source: E-Control



→ **Network regulation:
gas-tariff determination**

Amended Gas System Charges Order

On 1 November 2005 the E-Control commission enacted the GSNT-VO Novelle 2005 (Gas System Charges [Amendment] Order). This also necessitated amendment of the Control Area Managers Order.

The tariff changes reflected the findings of a cost review based on new data from the 2003 financial year. In addition, detailed provisions on tariff determination criteria were included in the order.

The 2005 amendments drew on the cost base established during the review and adjusted this to take account of industry productivity trends and the change in the system-operator price index. Volume-related changes were also made. Historically, the gas companies and other network industries have sometimes experienced considerable increases in total factor productivity for extended periods – particularly after major system changes such as the liberalisation and/or privatisation of a sector. Labour productivity, too, has risen sharply in recent years, although the Austrian gas industry remains below average for the EU-15. It could therefore be assumed that Austria has witnessed similar or stronger productivity growth since 2002 – particularly in view of the full liberalisation of the gas market in 2002, which increased the pressure to cut costs throughout the gas industry. The cost adjustments did not imply any conclusions about longer-term productivity

trends beyond the time of entry into force of the order. System operators were set the target of increasing productivity by 2.5% during the period between the balance-sheet date of the review year and the entry into force of the order. The amendment also took inflationary factors into account and made volume-related adjustments. Cost increases beyond companies' control during the period between the balance-sheet date of the review year and entry into effect of the GSNT-VO-Amendment 2005 were reflected in the system-operator price index. This is composed of the index of agreed minimum wages and salaries, construction price index and the consumer price index. The average volume increase was reflected in a target for the evolution of the entire cost block covered by the tariffs.

The review findings resulted in a marked drop in system charges, averaging around 10%, leading to total savings of EUR 47m for consumers. The increase in the amount of gas supplied also reduced average unit cost. Other reasons for the tariff reductions were low financing costs, the decreased corporation tax burden, and the first-time application of targets that the E-Control Commission had already set when determining the system charges for electricity.

The rate structure based on zones and tiers, introduced on 1 October 2002, has essentially performed well over its first three years in use. Nonetheless, the E-Control Commission has examined a number of proposals from market participants for adjustments, standardisation and expansion of the tariff structure, which are commented on elsewhere in this report.

Charts 36 and 37 use examples to illustrate the outcomes, broken down by provinces. The examples are of two typical consumers:

- A household with an annual demand of 15,000 kWh, connected to Grid Level 3;
- An industrial consumer with an annual demand of 90,000,000 kWh and an installed capacity of 8,000 kW, connected to Grid Level 2.

The maximum metering charges, which are unchanged, are omitted from the charts.

The E-Control Commission has ordered the following average tariff reductions:

- Burgenland: -11.0%
- Carinthia -10.7%

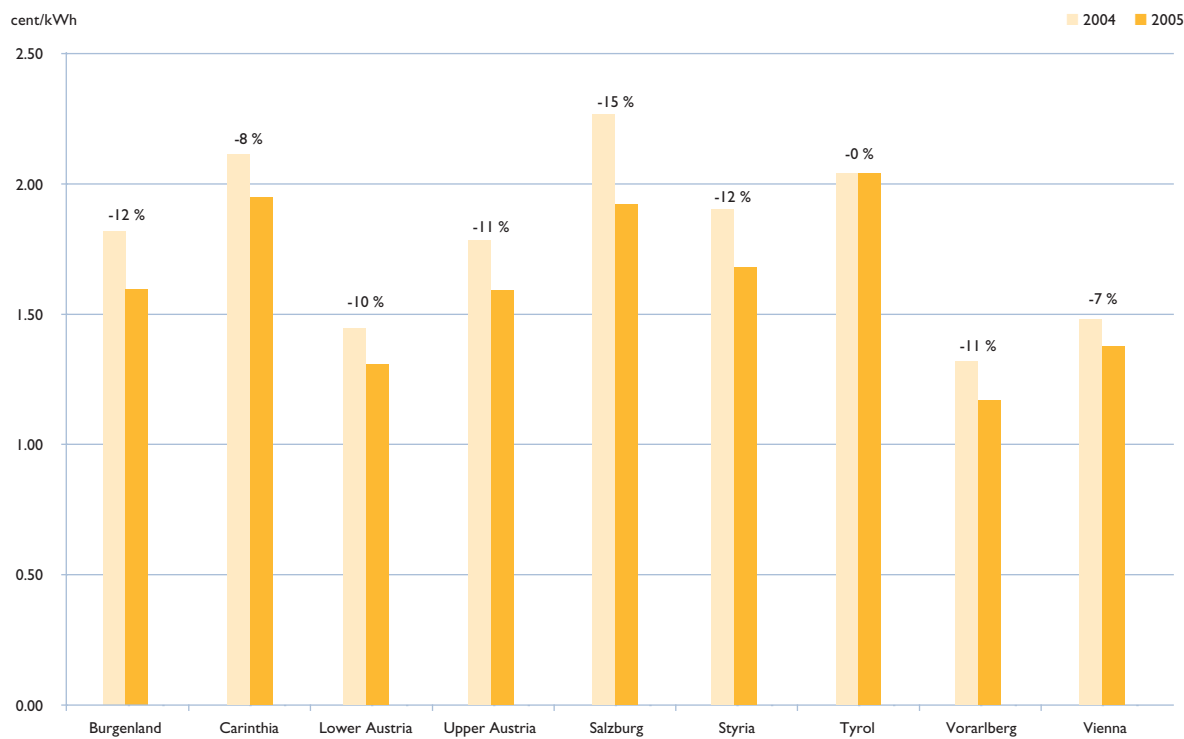
- Lower Austria -9.6%
- Upper Austria -13.2%
- Salzburg: -9.9%
- Styria: -11.6%
- Tyrol: No change
- Vorarlberg: -14.0%
- (from 1 Nov. 2005)
- Vienna: -6.9%

For the first time, the GSNT-VO-Amendment 2005 has established a cross-grid zone tariff for filling stations for gas-powered vehicles. The special tariff has been introduced in response to the rapid growth of this new market segment.

Audits are again being performed at all Austrian system operators with a view to amending the Gas System Charges Order in the course of 2006.

→ Household with an annual demand of 15,000 kWh at Grid Level 3

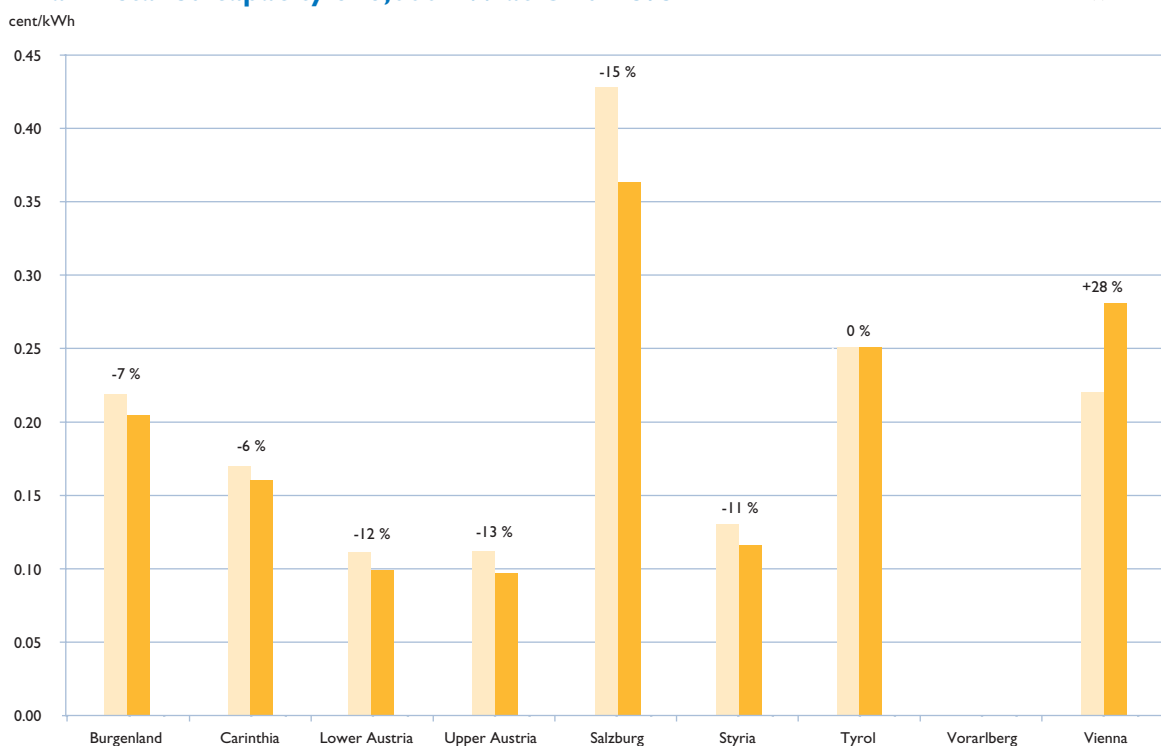
Chart 36



→ Industrial consumer with an annual demand of 90,000,000 kWh and an installed capacity of 8,000 kW at Grid Level 2

Chart 37

2004 2005



Source: E-Control

→ Creation of regulatory frameworks

Cross-border exchanges (transits)

More than 70% of Austria's import capacity is held for transit purposes. The 4:1 ratio of transit volumes to locally consumed gas makes Austria a classic transit country, through which gas passes on its way to France, Germany, Italy, and other downstream consumer markets. Gas is transported via Austria to downstream markets on the following transit systems:

- The southward Trans-Austria-Gasleitung (TAG);
- The westward West-Austria-Gasleitung (WAG);
- The north-eastward March-Baumgarten-Gasleitung (MAB);

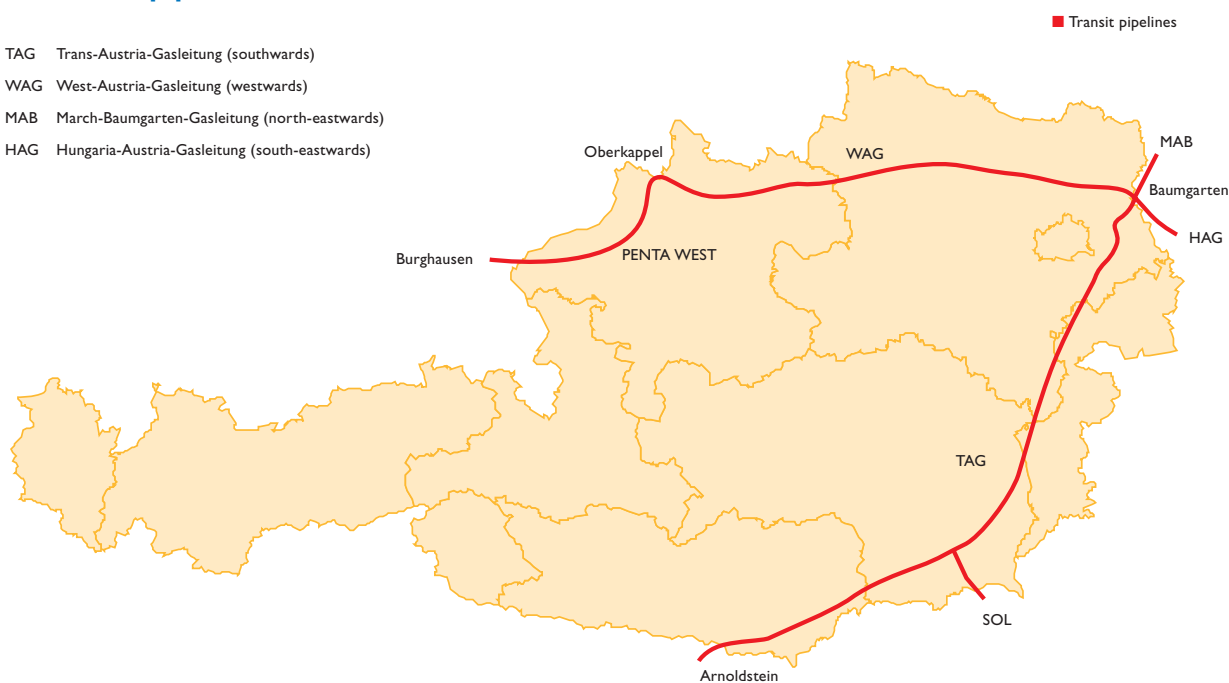
- The south-eastward Hungaria-Austria-Gasleitung (HAG);
- The westward Penta-West-Gasleitung (PW); and
- The south-eastward Süd-Ost-Leitung (SOL).

In Austria access to transit pipelines is granted on a negotiated basis and does not fall under E-Control's aegis. The regulator's powers with respect to system access and charges cover distribution and transmission pipelines where these are used for domestic transportation; however, cross-border exchanges and transits are subject to negotiated access (so-called "pipe-in-pipe" system for transit pipelines). Thus, under current legislation third-party access to Austrian transport capacity is governed by a dual system.

→ Transit pipelines in Austria

Chart 38

- TAG Trans-Austria-Gasleitung (southwards)
- WAG West-Austria-Gasleitung (westwards)
- MAB March-Baumgarten-Gasleitung (north-eastwards)
- HAG Hungaria-Austria-Gasleitung (south-eastwards)



Source: E-Control

Capacity allocation, congestion management and the extent of disclosures regarding the Austrian transit pipelines are matters for the transit companies. Transit capacity on the TAG and WAG systems is fully booked. Published historical data indicates that though capacity on the WAG from the east (Baumgarten) to the west (Oberkappel) is heavily booked, not all of it is actually used. Moreover, the published figures are drawn solely from schedules, and are not adjusted for any switches or counterflows. The physical flows are not published by the operating company, BOG GmbH.

In the past, the TAG pipeline has been almost completely booked out, and this is the case for future periods. However, historic capacity utilisation statistics are not published. It is likely that the congestion on this link is “contractual” rather than physical. The transit companies do not publish statistics on physical flows.

All assertions on the conditions of access to transit pipelines are based on the findings of E-Control’s monitoring activities. Compliance with the Guidelines for Good TPA Practice (GGP2)¹² can serve as a yardstick for transparency. Table 8 provides an overview of the degree of compliance with the main GGP2 rules by the Austrian transit systems.

¹² The GGP2 contain rules of conduct for European transmission system operators and among other things deal with system access, publication requirements, capacity allocation and tariffication. The GGP are a set of voluntary guidelines agreed by the European Commission, representatives of European transmission system operators, network users and energy regulators, adopted by the Madrid Forum. A revised version was published in September 2003.

→ Austrian transit companies' compliance with the GGP2

Table 9

	Requirements	BOG ¹	TAG ²	OMV ³
System information	System use rules and procedures			
	Gas quality, pressure			
	Network map inc. injection, withdrawal points			
	Disruption management			
	Tariffs and their derivation			Only Penta West – HAG, MAB: application of the “three or more shippers” rule
Services	Non-interruptible services	GTC, standard contract		
	Interruptible services			
	Additional services, e.g. additional balancing, ex post/ex ante pooling/trading imbalances	Residual balancing (+/-2%)		Residual balancing (+/-2%) Wheeling, matching, monitoring, documentation (SLA)
Capacity disclosure	Current capacity availabilities	Daily figures (graph) ⁴	Monthly figures (no graph) ⁵	Only PW, SOL – daily figures (graph)⁴
	Future capacity availabilities (18 months ahead)			Only PW, SOL – HAG, MAB: application of the “three or more shippers” rule
	Historic capacity use statistics (3 years back)			Only PW, SOL – HAG, MAB: application of the “three or more shippers” rule
	Calculation formula	Publication of parameters ⁶		Publication of parameters ⁶
	Tariff calculator			
	Capacity allocation rules	GTC/allocation		GTC
Congestion management	Secondary market			
	UIOLI ⁷	Interruptible UIOLI		
	Free info (where available)			
	Info available	Website		

Source: E-Control

■ fields indicate full compliance with GGP2

■ fields indicate partial compliance

■ fields indicate non-compliance

¹ WAG pipeline system; transit company Baumgarten-Oberkappel Gasleitungsgesellschaft mbH

² TAG pipeline system; transit company Baumgarten-Oberkappel Gasleitungsgesellschaft mbH

³ SOL, HAG, MAB and PENTA WEST transmission systems

⁴ Categories: sold/used/design; free; design = technical; firm only

⁵ Categories: technical/nominal/available; firm/interruptible

⁶ Pmin/pmax published; reference to hydraulic calculation

⁷ So-called “use it or lose it” principle (UIOLI)

The Austrian transit companies' GGP2 compliance record has been largely positive in terms of non-discriminatory system access and use. However, there are still gaps in compliance, particularly with regard to efficient utilisation of existing capacity through "use it or lose it" clauses and secondary market services, as well as some of the transparency requirements relating to capacity disclosures. Moreover, there appears to be insufficient cooperation between the transit companies at present. A precise analysis of transit flows is not possible because of the lack of regulatory powers in this area.

Functioning gas-to-gas competition is only possible if alternative suppliers are offered sufficient transport capacity to supply consumers. The removal of grid congestion is therefore an important task for the transmission companies. Tools for congestion management include:

→ Efficient use of available capacity:

If reserved capacity remains unused, and is also inaccessible to others, this hoarding of capacity leads to market foreclosure. Apart from the withdrawal of reserved but unused (hoarded) capacity,¹³ another important congestion management tool is the promotion of the trading of unused capacity on the secondary market. As with the primary market, the efficiency of the secondary market is heavily dependent on market transparency. Experience has shown¹⁴ that there is a tendency for anti-competitive behaviour such as capacity hoarding to be deflected from the primary to the secondary market. If competitive distortions are to be

avoided, the same principles of transparent availabilities and non-discriminatory allocation must be applied to secondary as to primary market capacity. This is because selective or inadequate information creates competitive disadvantages for competitors who are excluded from receiving all details. Transit companies have a central role to play in promoting the emergence of a transparent and efficient secondary market. Transparency requirements can be best fulfilled if the transit company creates a trading platform on which all available secondary market capacity is made generally accessible.

Table 9 shows that the withdrawal of reserved but unused Austrian transit capacity is exclusively on an interruptible basis. However, as regards temporarily unused interruptible capacity the extent to which the services offered match demand is an important consideration. Particularly where new entrants are concerned, offers of interruptible capacity may not suffice to break down entry barriers, as supplies to end-users (especially domestic consumers) are usually provided on a non-interruptible basis. Interruptible capacity generally appeals to incumbents with opportunities for marketing portfolios of transport products.¹⁵

→ Construction of new infrastructure:

Where growing demand for capacity cannot be met by efficient allocation mechanisms alone, the development of pipeline systems in accordance with minimum requirements is one of the tasks of transmission companies as defined by the second Gas Directive.¹⁶

¹³ So-called "use it or lose it" principle (UIOLI).

¹⁴ See European Commission (DG Competition), Energy Sector Inquiry – Issues Paper (version 15.11.2005), section (45). http://europa.eu.int/comm/competition/antitrust/others/sector_inquiries/energy/issues_paper15112005.pdf.

¹⁵ See European Commission (Competition DG), Energy Sector Inquiry – Issues Paper (Version 15.11.2005), section (44). http://europa.eu.int/comm/competition/antitrust/others/sector_inquiries/energy/issues_paper15112005.pdf.

¹⁶ Directive 2003/55/EC of the European Parliament and of the Council of 26 June 2003 concerning common rules for the internal market in natural gas, repealing gas Directive 98/30/EC, OJ L 176/57 of 15 July 2003.

This responsibility of transit and transmission companies will be particularly important to the Austrian gas market in coming years because of forecast gas demand growth and the related need for more transport capacity. This is particularly true of those parts of Austria supplied by the TAG system (Lower Austria, Styria, and Carinthia), due to the planned construction of gas-fired generating stations. Congestion is already affecting capacity used to meet domestic demand, and the problem threatens to become increasingly severe due to demand growth. According to the findings of a study of gas demand over the 2006–2010¹⁷ period undertaken as part of the long-term planning activities of Austrian Gas Grid Management (AGGM), the control-area manager for the Eastern control area, the capacity of the TAG pipeline system will need to be increased of 0.5m cu m/hour by 2010 to meet anticipated additional demand.

Some relief is likely to be provided by the award of contracts for the expansion of the TAG system, planned for January. However demand for this additional capacity will probably be far in excess of supply, meaning that marked pro rata reductions in capacity allocations are to be expected.

In the event that the TAG rationing procedure fails to meet capacity requirements, and that adequate expansion of the system does not take place, alternative pipelines will need to be built if Austrian security of gas and electricity supply is to be maintained. Monitoring and supervisory functions.

→ Monitoring and supervisory functions

Monitoring of unbundling

Since the unbundling requirements of the new Gas Directive were largely met by the Natural Gas (Amendment) Act 2002, BGBl I No. 148/2002, initial experience has already been gained with their implementation:

In October 2003, E-Control requested system operators to draw up compliance programmes, nominate compliance officers and report to it. To facilitate evaluation of the compliance programmes, E-Control sent a questionnaire to the operators. The responses reached us during the spring of 2004.¹⁸ In October 2005, E-Control called upon system operators to submit their annual reports under section 7 Natural Gas (Amendment) Act. These reports are required to give an overview of the specific actions taken as well as documenting any cases of discrimination. However, initial scrutiny of the documents received revealed that they largely restricted themselves to general statements and referred to the compliance programmes drawn up during the first reporting year. With a few honorable exceptions, the system operators concerned are flouting the intentions of the legislation. It remains to be seen whether this will worsen still further.

Supervision of control-area managers

Long-term plan for the Eastern control area in the FY 2006-2010 period

As the control-area manager for the Eastern control area, Austrian Gas Grid Management AG (AGGM) is required by the Natural Gas Act to draw up long-term supply and transport capacity plans on an annual basis, and to use these to identify current and future bottlenecks in the transmission network. These plans must be submitted to the E-Control Commission for approval.

¹⁷ www.aggm.at.

¹⁸ See Annual report 2004.

During the year under review, AGGM duly submitted a report on the 2005 long-term plan, taking account of the objectives set out in section 3 GWG, and this was largely approved by the Commission on 14 September 2005.

Sources of data and basis of forecasts

The 2005 long-term plan is based on data acquired by AGGM in the course of its ongoing transmission-system management activities, and on information provided by the transmission- and distribution-system operators and suppliers. The forecast of the demand and supply situation up to 2030 made in connection with the Feasibility Study Südschiene ([FSS] Southern Trunk Line Feasibility Study) meant that additional data was available as compared to the 2004 long-term plan. However, AGGM was only able to validate the forecast data used in the feasibility study itself, due to shortage of time.

The consumption forecasts built into the sales model yield a total increase in sales volume of 34% over the 2004–2010 period (5% per annum). All planned power generation projects are included in these figures. The projected increase in capacity requirements over the same period is 23.6% (3.6% per annum) due to structural changes in consumer behaviour (more baseload consumers). Comparability with the WIFO forecast is limited due to the fact that some specific power generation projects were not known to the institute and thus could not be taken into account. Furthermore, WIFO's forecast is based on a smooth growth curve, whereas in reality capacity ratchets up in the course of a project's implementation. The simulation runs were based on the sales model agreed with the distribution system operators.

Findings

Future capacity utilisation was calculated and potential congestion localised. It appears that for winter peak load scenarios, transport capacity is insufficient to implement planned customer projects, especially in Burgenland, Carinthia and Styria.

The 2005 long-term plan is the first to include seasonal storage shipments, as far as is possible on the basis of the information available, and offers a rough assessment of the situation. The plan highlights the competition between power stations' transport capacity needs and those related to storage in Baumgarten and Puchkirchen. The plan also deals with the long-term capacity needed to maintain full supplies for Austrian consumers.

In order to maintain supplies to existing consumers and applicants for connections in the long term, various options for overcoming grid congestion in the southern Lower Austria, Styria and the TAG areas were developed as part of the FSS, and a decision made on these.

Action required

Additional capacity is to be made available on the Pyhrn pipeline to cope with congestion in Styria. New capacity on the TAG will also need to be purchased. Additional capacity on the TAG will likewise be needed to meet forecast demand growth in Burgenland, Carinthia and Lower Austria. Furthermore, as forecasts predict an increase in injection volumes at Oberkappel in the next few years, the capacity of the WAG needs to be expanded.

The Kirchberg metering station must also be rapidly expanded to relieve storage transport congestion in the summer months.

One of the tasks of the FSS is to rank the feasible options. The study found that the best option in economic and strategic terms was that of purchasing the new capacity required on the TAG and laying an additional pipeline from Eggendorf to Bruck an der Mur via the Semmering hills.

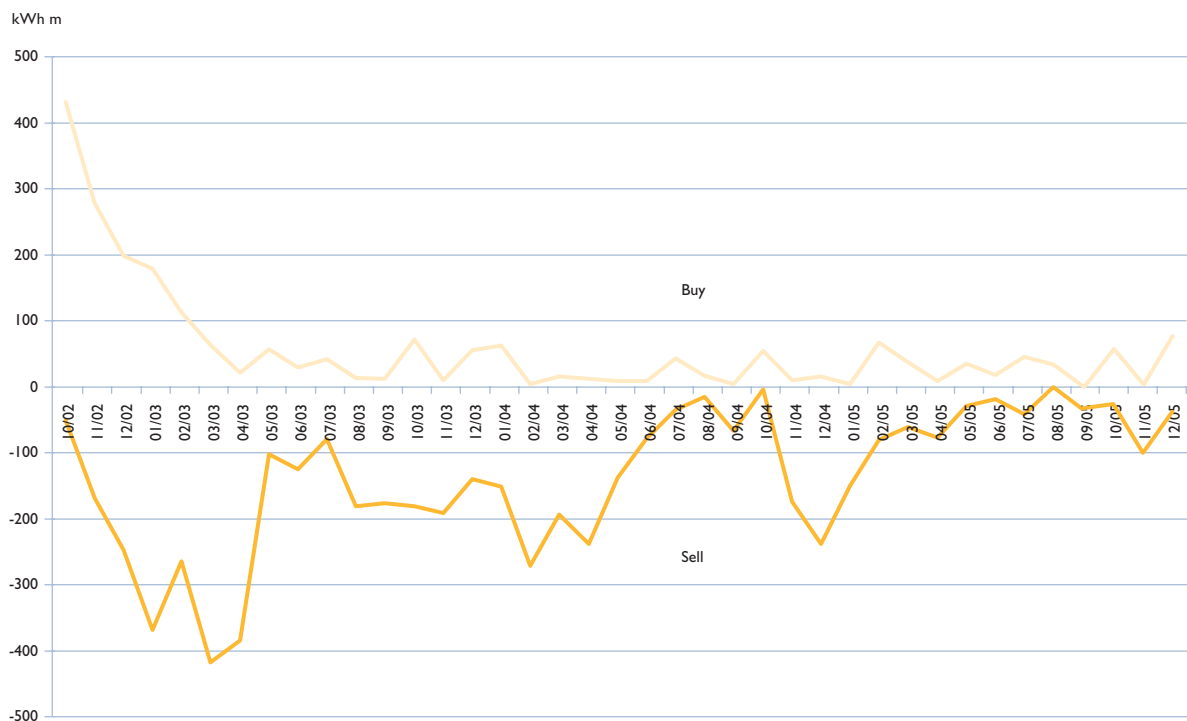
Balancing energy market in the Eastern Control Area

During the first year of operation (gas year 2002/ 2003), the cost to system operators of the system losses and own-use balancing groups

emerged as a major problem, amounting to some EUR 3m. In order to bring these costs down, when the market rules were being revised a package of measures was put together, which included a change in the price formula for hours in which no balancing energy is called off and measures for improved linepack usage. Since then the network losses and own-use balancing groups have recorded revenues in most months, and their income since October 2003 totals approx. EUR 2.4m. Should this trend continue, these balancing groups will be able to post net revenue for the first time in the 2005/2006 gas year.

→ Physical balancing-energy purchase and sales volumes trends from October 2002 to December 2005

Chart 39



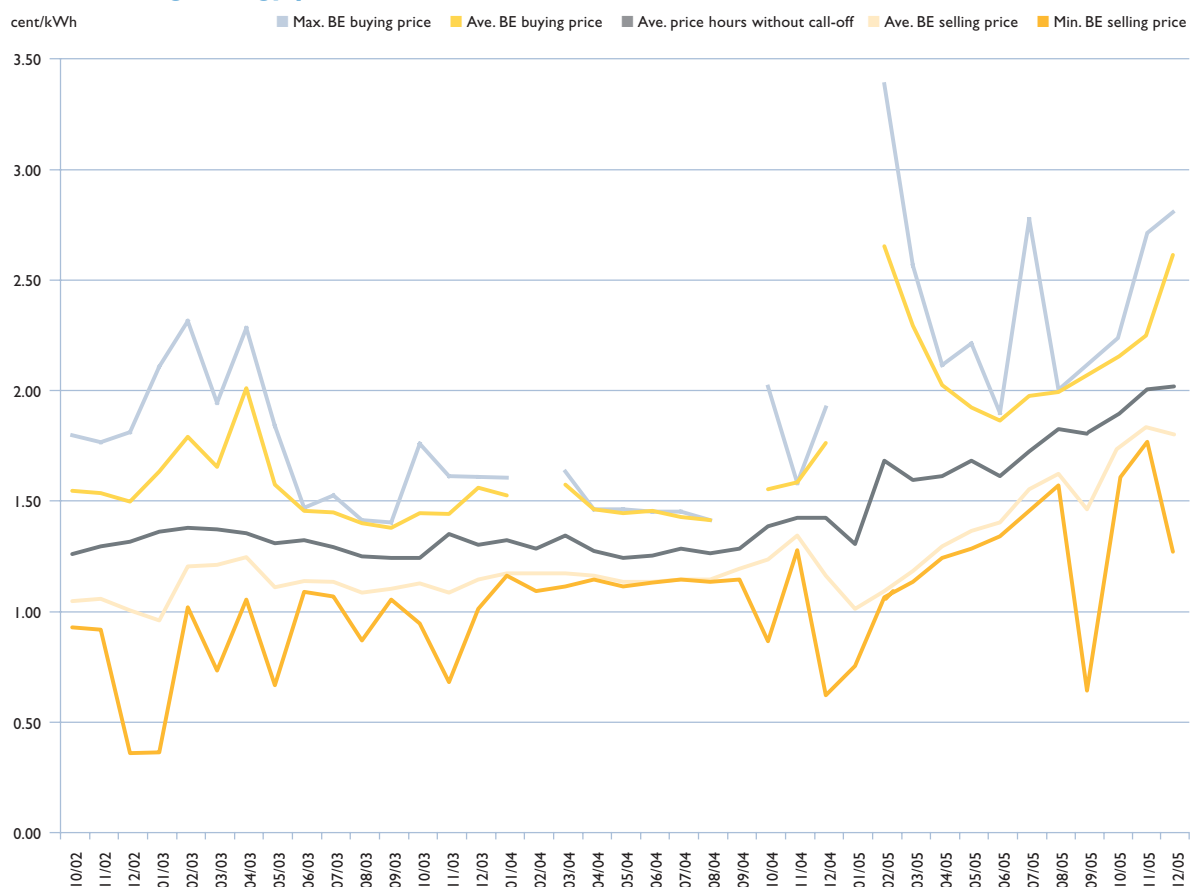
Source: E-Control

Since liberalisation in October 2002, the amount of energy called off by the control-area manager for physical balancing of the market has been declining, and this trend continued during the 2004/2005 gas year (see chart 39). Thus the amount of balancing energy required by the control-area manager as a proportion of total consumption in the Eastern control area has sunk continuously since the introduction of the balancing-energy market and currently stands at around 1%.

Another trend that has become apparent is increasing recourse to the balancing market as a spot market, with some balancing groups

using it buy or sell gas by making over or under-deliveries. Accrued balancing power (the extent to which commercial balancing groups are long or short) was equal to almost 5% of total consumption in the Eastern control area during the 2004/2005 gas year. Balancing energy prices have been on the upturn due to higher gas prices and the extremely cold winter months in 2005 (Chart 40), and there have been some pronounced peaks as compared to the previous gas year. Liberalisation resulted in changes to storage contracts (capacity data), and this could account for the increased volatility, particularly in the winter months.

→ **Balancing-energy price trends between October 2002 and December 2005** Chart 40



Source: E-Control

In some months no balancing energy was purchased, and thus no prices are available.

EconGas merger – 2005 gas release programme

Clearance of the part-merger between the EnergieAllianz partners (Wiengas, OÖFG, Begas, EVN AG and Linz Gas Wärme) and OMV Erdgas, which created EconGas, was made conditional on the fulfilment of various commitments by the parties, including the conduct of a gas release programme. The third auction under the gas release programme took place on 13 July 2005. As a provincial gas company had returned contracted volumes a total of 270m cu m of gas (equivalent to approx. 3% of Austrian demand) was auctioned through an OMV subsidiary, Central European Gas Hub Baumgarten. Some 28 bidders registered for the auction. The ten successful bidders were from Austria, Germany, Italy and Switzerland. Although two Austrian bidders were successful, it is probable that less than 10% of the volumes auctioned will be sold on the Austrian market.

In 2004, EconGas, Central European Gas Hub, the Federal Competition Authority and E-Control discussed the results of the 2003 auction in detail, and some modifications aimed at increased transparency and lower costs were subsequently made. The securities required were considerably reduced, and more information provided on infrastructure services (access to transportation, storage and hub

services). These changes improved the conditions for participation in the gas release programme (by the lowering the cost).

Due to the sharp rise in import prices in the 2004/2005 gas year, the auction price, which was EUR 13.21/MWh according to press reports,¹⁹ turned out to be attractive, as it was a fixed price for one year. The number of bidders registering in the past two years (around 30) points to growing interest among market participants in the Baumgarten market. Nonetheless, the additional volumes entering the Austrian market remained low. So far only one new gas trader has managed to enter the Austrian gas market via the gas release programme. In our opinion the programme has failed to meet its objective, established by the merger commitments, of “increased liquidity in the interests of promoting competition in the gas industry”.

The storage market

The sources of law underlying regulation of the storage market are the Natural Gas (Amendment) Act – particularly sections 39, 39a and 39b – and the EconGas merger proceeding and related commitments, as well as the EU Acceleration Directive. Section 39b Natural Gas Act provides inter alia for all storage contracts to be submitted to E-Control.

¹⁹ Energate, 13 July 2004; www.energate.de (site in German only)

An important provision of the Act is the requirement to make a comparison of storage prices in Austria with those in other EU member states (section 39a[2] GWG). If Austrian storage prices are more than 20% above the average for comparable services in other member states the E-Control Commission is entitled to intervene in price setting on the storage market by issuing a notice. An initial price comparison carried out by E-Control in November 2004 on the basis of the tariffs posted on the internet showed that some prices charged by the Austrian storage operators were already above this threshold. This led one storage operator to reduce a published tariff.

One of our regulatory objectives is increasing the transparency of conditions for access to storage capacity. On a European level this is supported by implementation of the Guidelines for Good Practice for Storage System Operators (GGPSSO), which were adopted in March 2005 as part of a Madrid Process mini-forum in Brussels and entered into force on 1 April 2005. These guidelines take the form of a voluntary agreement between storage operators and regulatory authorities. However, the European association of storage and system operators, Gas Infrastructure Europe (GIE), and its members strongly recommend compliance.

The central provisions relate to the unbundling of storage operations from other parts of the business, the offer of certain storage services (unbundled and bundled), capacity allocation and congestion management, transparency requirements and secondary market rules. Some of the requirements applied from 1 April 2005 and all must be implemented by 1 April 2006.

Compliance will be monitored by ERGEG, and in the event that shortcomings become known a possible consequence could be a European regulation on access to storage facilities.

ERGEG published its first report on implementation of the guidelines in December 2005.²⁰ ERGEG found that implementation of the guidelines by Austrian storage operators left much to be desired. Room for improvement was identified with regard to secondary market arrangements and fulfilment of the transparency requirements. Compliance with the transparency requirements by one Austrian storage operator was particularly inadequate. The Austrian storage operators have not seen the need for a secondary market until now, as there has been no congestion, but this situation is likely to change as early as 2006.

²⁰ Posted on www.ergreg.org under ERGEG Documents

→ Austrian storage operators' implementation of the Guidelines for Good TPA Practice for Storage Systems Operators (GGPSSO)

	Requirements	RAG	OGG
Basic information	Technical capacity	0.7 bn cu m	1.8 bn cu m
	Available capacity	Congestion	yes
	Legal status	Vertically integrated [no legal unbundling of storage/production/merchant functions]	Combined operator (SSO and TSO) [Part of a vertically integrated company]
Equal treatment	Document setting out terms and conditions relating to storage use by the affiliated company	SSO legally obliged to pass on all storage contracts to NR ¹	SSO legally obliged to pass on all storage contracts to NR ¹
Confidentiality	Database kept separate		
	Code of conduct and/or compliance programme		Not explicitly related to storage
	Firewall – monitored by regulatory authority		Compliance programme: Monitoring by regulator not specifically related to storage
	Separate building for the SSO and the supply business		
Storage services offered	Storage capacity not excluded from TPA pursuant to the Gas Directive	no official information	no official information
	Bundled services including compression and withdrawal services, and working gas volumes with defined ratios of capacity to volume		
	Pooling of nominations		
	Service developed with proper consultation with storage users and taking market demand into account	Consultation of some customers	Consultation of all existing & potential customers (bilateral)
	Injection and withdrawal services	Technical restrictions	
	Unbundled services to complement bundled services for free capacity at beginning of the year ²	From 1 April 2005	From 1 April 2005
	Short-term storage services (> 1 day to < 1 year) ²		
	Fixed and interruptible storage services ²		

Status January 2006

Source: E-Control from: ERGEG, monitoring report on the implementation of the GGPSSO (final version)

Table 10

■ compliance with the GGPSSO ■ non-compliance with the GGPSSO ■ partial compliance with the GGPSSO

	Requirements	RAG	OGG
Efficient system use	Capacity allocation mechanisms	First come first served	First come first served
	Congestion management		No long-term congestion
	Anti-hoarding mechanisms		No long-term congestion
Disclosures	Technical storage capacity		From 1 Nov. 2005
	Free storage capacity	³	From 1 Nov. 2005
	Contracted storage capacity	³	From 1 Nov. 2005
	Methods of determining available storage capacity published	³	
	Preferential treatment of transmission system operator based on publicised rules	³	
	Storage utilisation rate	³	From 1 Nov. 2005
	Tariffs and GTCs for all services offered		
	Services offered, standard GTCs, customer's rights and obligations		
Secondary market	Bulletin board		Free capacity on the primary market
	Permission to sell storage services		
	Permission for title transfer of storage services ¹		
	Disclosure of traded storage services ¹		Planned (dependent upon sufficient demand)
	Option of aggregating acquired secondary capacity ⁴		Planned (dependent upon sufficient demand)

OGG: OMV Gas GmbH

RAG: Rohöl Aufsuchungs AG

RL: Directive 2003/55/EC of the European Parliament, Rules for the internal market in natural gas

SSO: Storage System Operator

¹ NR Means of monitoring non-discrimination

² Compliance deadline: 1 April 2006

³ No disclosures on grounds of avoiding market abuse and protecting customers' business interests; but more than three customers so the "3 minus rule" does not apply

⁴ Compliance deadline: 1 April 2006 or 1 Dec. 2006 in case of substantial IT problems

→ Statistical activities

The amendments to the E-RBG and GWG in 2002 transferred responsibility for the performance and commissioning of statistical surveys and other statistical studies relating to all forms of gaseous energy sources from the Minister of Economic Affairs and Labour to E-Control (sections 14 E-RBG and 59[1] GWG). E-Control is thus responsible for the preparation of gas and electricity statistics presenting a picture of these two fully liberalised energy markets, in addition to its duties as the regulator of the industries in question.

E-Control's statistical functions in respect of the gas industry are defined by the Gas Statistics Order 2002. After two years' experience with the gas statistics, an amended Gas Statistics Order published during the first half of 2005 adjusted the contents of the surveys to the needs of users and the capabilities of companies subject to reporting duties. The order was published in the official gazette supplement of the Wiener Zeitung No. 82, on 28 April 2005. The most notable changes clearly aligning the features of the surveys to physical circumstances, adapting the reporting requirements to the existing market rules and precisely defining the random sample surveys used to ascertain retail prices.

→ Studies

Reorganisation of system usage at the transmission-system level

Initial position

The liberalisation of the Austrian gas market, the amendment of the Natural Gas Act and the related introduction of the new system-access model represented first steps towards functioning competition. This in turn depends both on the availability of sufficient capacity and on its efficient use, as well as an appropriate tariff system: Despite widespread acceptance of the current market design (capacity and tariff model) on the part of market participants, E-Control has identified room for improvement. Apart from the evidence given by AGGM on the need for improvements to facilitate long-term planning, action is required to optimise system use and the allocation of injection capacity when portfolios change.

Expert reports

In March 2005 Prof. Stefan Bognor and Dr. Peter Christoph were commissioned to carry out a study entitled "Evaluation of the tariff model under the current legal framework and of capacity allocation with a view to efficient, cost-saving use of capacity at the transmission-system level and the formulation of regulatory recommendations".

Fact-finding exercises and workshops

As the findings of the study would affect all market participants (system operators, wholesalers and retailers, balancing-group representatives, control-area managers and final customers), these groups were consulted from the outset. By talking to representatives of each group (fact-finding exercises), Bogner and Christoph were able to gauge attitudes to the current market model, with all its strengths and weaknesses.

The information gained from these talks and the conclusions derived from it were discussed at a series of workshops. The following issues were identified:

- Need to fully exploit maximum technical capacity modifying the capacity-allocation system;
- Need for increased planning certainty for distribution-system operators, transmission-system operators and control-area managers (e.g. AGGM);
- Need for transmission-system operators to receive near-term compensation for providing increased standby capacity.

The entry-exit model was proposed as an alternative to the current postalised tariff system whereby 30% of transmission costs are rolled over on to Grid Levels 2 and 3 while the remaining 70% are covered by a load-dependent entry tariff.

In addition, AGGM presented an entry-exit model of its own, whereby all Grid Level 1 costs would be billed using entry and exit tariffs. All the market participants and interest groups consulted were then given an opportunity to express their views on the following issues:

- How to arrive at increased planning and investment certainty for transmission-system operators;
- How to optimise capacity utilisation, allocation and reservation;
- What represents a functioning gas market and functioning competition;
- How to achieve investment security for distribution-system operators.

Findings

The majority of the market participants consulted rejected the proposed entry-exit model due to their overall satisfaction with the current system and the shifting of costs to which it would give rise. Calculations based on modelling of the current and alternative system showed that omitting the balancing factor would lead to significant shifts in transmission costs to other grid levels. Thus the Vienna grid zone, which has the largest number of consumers, would bear a considerably heavier burden. It was also decided to recommend retention of the “back-pack” (portability) principle established by section 17(1) Natural Gas Act as the legal framework.

However, it was found that the current system was in need of improvement in terms of the planning information yielded by it, i.e. the quality of the capacity-allocation data at the transmission-system level. AGGM currently uses withdrawals from the distribution system as a basis for assessing transmission capacity. The conclusion was therefore reached that a vital precondition for improving the current system is injection-point-based capacity information, obtained from balancing-group representatives.

AGGM is working on a package of actions aimed at fulfilling these requirements. The proposals resulting from the study are to be discussed with representatives of all market participants during the review of the market rules in the spring of 2006.

Injection of biogas into natural gas grids

The injection of biogas into natural-gas networks is attracting increasingly widespread discussion. The potential for substitution of natural gas by biogas is put at 10–30% of current natural gas sales. E-Control commissioned two studies on the potential impact on the Austrian gas market model. The Leipzig-based Institute for Energy and Environment was commissioned with providing an expert opinion on biogas potential, and a dissertation written at the Vienna University of Technology Institute for Thermodynamics and Energy Conversion looked into technical and economic questions related to the injection of biogas into natural-gas networks.

The Institute for Energy and Environment carried out the first study of biomass availability for the biogas production in Austria, and examined the amount of biogas that could actually be injected into the grid. The results were broken down by provinces. The dissertation was written at the Institute for Thermodynamics and Energy Conversion dealing with the maturity, economic viability and energy efficiency of the technology for injection of biogas into natural-gas grids.

Analysis of biogas potential

The detailed analysis of potential biomass supply by the Institute for Energy and Environment takes competing uses, and the availability of production and processing technology into account. The results reflect structural differences between the various provinces. The study reaches the conclusion that a maximum of 1.7% of domestic gas demand could theoretically be met by biogas. However this leaves the question as to whether such gas volumes could actually be injected into the natural-gas grid.

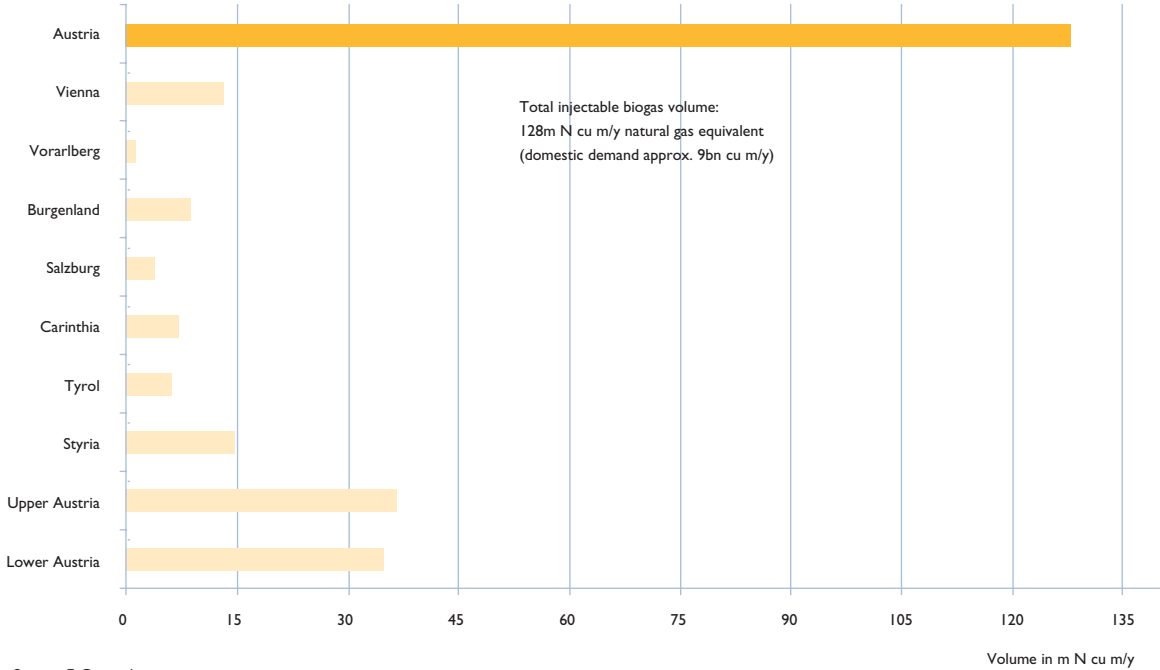
In the next stage of the study, the structure of the natural-gas network was investigated along its ability to accept biogas. Strong seasonal fluctuations are an inherent feature of the gas market, and the very low demand in summer seriously limits the opportunities for biogas injection. A comprehensive survey of system operators was carried out to determine the maximum amount of gas that their networks could theoretically accept. This information

was then compared with the geographical availability of biomass. Taking the supply limitations into account, the grid can take a theoretical maximum of 1.4% domestic demand (2004: 9bn cu m). This is equivalent to 128m cu m/year (see Chart 41).

The actual potential is likely to be much lower, as the theoretical potential presupposes an optimum distribution of biogas plants and does not take into account any licensing problems. A case-by-case analysis needs to be performed for every planned plant to ascertain whether it is actually possible to connect it to the natural-gas grid.

→ Theoretical biogas potential in Austria, by province

Chart 41



Technical and economic analysis

There is already experience of the use of biochemical biogas production (fermentation) for power generation which shows the generating technology to be mature. However, there is little practical experience with biogas processing for injection into natural-gas networks. A few plants are injecting processed biogas into a natural-gas network as part of subsidised research projects. A research project in Austria recently began investigating the feasibility of the technology, using a pilot plant. There is mature gas purification technology but this is associated with very heavy costs. The gas processing costs alone are around twice as high as the production cost of natural gas (1.5 cent/kWh).

As regards thermochemical biogas production (wood gasification) there is neither well-tried technology, nor is suitable equipment available that would permit injection into a natural-gas grid. These technologies are still at the research and development stage, and are unlikely to be commercialised for the next ten to 15 years. A key issue is the quality standards that biogas must attain if it is to be injected into the natural-

gas grid. Technical problems due to high carbon dioxide content, as well as capacity limitations and payment issues are all compelling arguments for processing biogas to natural-gas quality.

Investigations of economic viability have shown that the production costs are five to six times those of conventional gas, or between 70 cent and EUR 1/cu m of biogas of natural-gas quality at plants of optimum scale.

Security of supply

An argument for renewable energy sources is the import dependency associated with fossil fuels. Around three-quarters of Austria's natural gas is currently imported from Russia, Norway and Germany, while the rest is domestically produced.

The findings of the potential analysis clearly show that, with a maximum theoretical potential of around 1.4% of the total gas demand, no significant improvement in security of supply is feasible. Furthermore, biogas is produced in a steady flow, and cannot be adjusted to the highly seasonal structure of demand.



Responsibilities common
to electricity and gas 2005



→ **Arbitration panel – Taking stock after three years**

Consumers who are unable to understand their bills even after talking to their supplier, or are dissatisfied with the quality of a contractual service can contact E-Control's arbitration panel up to three years after the cause for complaint occurred. Section 10a E-RBG also permits other market participants (e.g. suppliers and system operators) to submit disputes and complaints to the panel. Typical cases are disputes between system operators and other market participants, or concerning the invoicing of electricity or gas supplies, or system charges.

An informal written application (by letter, fax or e-mail), briefly outlining the events in question and enclosing all relevant documentation, is sufficient to invoke the arbitration panel. Events or invoices dating back more than three years cannot be heard; neither can any matters which are the subject of pending litigation or have already been the subject of an arbitration procedure.

Of the 500 procedures since the establishment of the arbitration panel, 220 took place between 1 October 2004 and 30 September 2005. Of these, 95.3% resulted in an amicable settlement, meaning that the consumers concerned achieved satisfactory solutions, misunderstandings were cleared up or the parties were once again on speaking terms after the procedure. The issues involved in arbitration and reasons for

complaints remained much the same as the year before. Most complaints were again connected with inexplicable increases in consumption and bills that consumers were unable to understand. The number of complaints relating to connection costs arising from new or expanded installations declined.

Apart from formal proceedings and a weekly average of 20 telephone inquiries, arbitration panel employees replied to over 100 letters and 450 e-mails sent to schlichtungsstelle@e-control.at. Queries related to everything from general inquiries to legal principles (laws, orders and the market rules) and questions over prices, system charges and the power consumption of household appliances.

Further information on the activities of the arbitration panel is provided by its report for 2005, which can be downloaded from the E-Control website at www.e-control.at.

→ **Prevention of market abuse**

E-Control's market monitoring and oversight responsibilities include acting to prevent discriminatory treatment of market participants by monopolists (system operators). If E-Control detects abuse it is required to take all necessary steps to restore compliance with the law without delay. In 2005 we conducted just under 20 abuse proceedings. Most were instigated by consumers' suppliers or consumers themselves. Some irregularities became known to us

through our arbitration role, meaning that abuse proceedings were initiated as well as arbitration. The issues concerned varied. Examples were: allocation to given grid levels; billing of system provision and admission charges; connection point and system admission costs for increases in installed capacity; billing for transformer hire; connection point and upstream grid costs for generators; framework agreements on billing and input tax deduction between system operators and suppliers; supplier transfers, and additional imputed costs for renewable electricity.

During such proceedings we investigate whether the system operator concerned has observed the statutory requirements and the market rules, and has refrained from discriminatory behaviour. If an abuse is identified the company in question is required to desist from this behaviour immediately, under a staged procedure (restraining order followed by a notice of restraint). During the year under review it was necessary to issue one notice in order to restore compliance. In the other cases, it proved possible to put an end to the abuse during the investigation, thereby rapidly re-establishing legal compliance, or it became evident that no abuse had taken place.

In many cases, on learning of malpractice E-Control staff have been able to deal quickly with legal grey areas, without initiating proceedings, thus enabling market participants to achieve compliance.

→ Public-information activities

Lecturing and publications by E-Control staff

In 2005 we again mounted a major public information effort to keep consumers and market participants up to date with current developments on Austria's liberalised energy markets. To this end E-Control staff members addressed some 120 Austrian and international meetings and conferences on energy market liberalisation. Staff also contributed to relevant trade magazines and specialist journals.

Media relations work in 2005

During the year under review E-Control again gave high priority to public relations work, and this played a prominent part in activities throughout the year. For instance, we held a number of press conferences and energy round tables, frequently issued press releases and regularly briefed journalists off the record. Throughout 2005 the gas and electricity industry investigations by the Federal Competition Authority and E-Control generated an increased call for information and more inquiries from energy consumers, and we responded by stepping up our PR activities.

Tariff calculator

The number of calculations made on the E-Control online tariff calculator has risen dramatically as a result of the price increases by gas and electricity suppliers that began at the end of 2004. Some 15,000 tariff calculations are carried out on peak days. Around 70% relate to electricity and 30% to gas. Of the electricity price calculations about 90% concerned domestic, 8% business and 2% farm tariffs, last year. Some 91% of the gas calculations were of domestic and 9% of business rates. Only a very small number of calculations were carried out for farm tariffs, which are usually similar to the domestic rates. More than 700,000 calculations were made in 2005 (compared with 200,000 in 2004). The number of registered WatchDog users has also risen dramatically. In 2005 the number of people being regularly informed about price changes via the WatchDog service rose from 1,700 to almost 4,700.

The increased technical demands on the tariff calculator necessitated a relaunch. The work performed over the summer months and into the autumn, in cooperation with Ontec, enabled the upgraded tariff calculator to go live at the end of 2005. The new software has enhanced system stability and allows a greater number of calculations to be processed at the same time. Due to the new system it will be possible to extend the functionality of the tariff calculator during the first half of 2006.

In 2005 a list of business-to-business suppliers was added to calculator, as E-Control often receives inquiries from large consumers about potential suppliers of gas and electricity. The tariff calculator is not relevant to the needs of large consumers owing to their large offtake and the fact that their consumption patterns vary so greatly. The business-to-business supplier list gives consumers with high offtake levels an opportunity to learn about potential suppliers and request quotations.

Hotline

E-Control runs a hotline for all general consumer inquiries on 0810 10 25 54 (local rates). On average, calls are received from 325 consumers every month. These are mostly general inquiries relating to liberalisation, and concern such matters as supplier transfers, price comparisons and how to obtain power generated from renewable energy sources, as well as information about individual suppliers. After the announcements of energy price rises in autumn 2004 and Verbund's entry to the retail market in July 2005 the number of inquiries leapt to record levels of over 100 calls per day.

E-Control's increased media presence also played a part in the 170% year-on-year increase in the number of calls to the consumer hotline.



Responsibilities common to electricity and gas

→ International cooperation between regulatory authorities

→ Participation in CEER and ERGEG

The Council of European Energy Regulators (CEER) brings together European gas and electricity regulators to pursue issues of common interest and concern. CEER prepares the work for ERGEG – an advisory group that assists the European Commission.

The work of the regulators is aimed at promoting effective competition in European gas and electricity markets through successful liberalisation and the establishment of a single European energy market.

The work programme of the regulators comprises: the development of high level policy; detailed technical advice on regulation and rules, and the monitoring and reporting of compliance with, and effectiveness of, the relevant rules and guidelines, and the state of competition, in energy markets. The five major themes addressed are:

- Cross-border electricity trade and security of supply;
- Monitoring of regulatory and market developments;
- Transparency of information;
- Regional markets and south-eastern Europe;
- Best-practice regulation.

Cross-border electricity trade and security of supply

The regulators' objective is to ensure that the regulatory framework facilitates the maximum use of available interconnect capacity and investment in new capacity where that is needed. In 2005, CEER examined how cross-border infrastructure might be efficiently promoted and reviewed how power exchanges may interact. ERGEG is taking this work forward in 2006, and CEER will look at market design issues of relevance for regional markets.

Monitoring of regulatory and market developments

The Electricity and Gas Directives (2003/54/EC and 2003/55/EC) provide for increased reporting activities at both the European and national level from 2005 onwards. The European Commission closely monitors the implementation of the Directives through its annual benchmarking reports on the implementation of the internal market. The Commission has asked regulators to assist it in monitoring and reporting back on the degree of implementation of the legislative and regulatory framework including any set of guidelines or recommendations issued by ERGEG. The implementation of EU law and voluntary agreements is overseen by CEER and ERGEG on an ongoing basis, and they issue monitoring reports.

Transparency of information

Access to market information is essential to functioning competitive markets. Having stated what information is relevant and demonstrated the link between the availability of information and energy price formation, in 2006 CEER will be focusing more on transparency of information, including where it can be published and the management of information that cannot be disclosed.

Regional markets and the South-East Europe Process

CEER began working on regional market issues in 2005. In 2005 it was involved in market design issues related to interaction between cross-border congestion management and the designs of connected national markets. This work will build on the responses to the ERGEG consultation paper on "Creation of Regional Electricity Markets". The gas industry work will likewise be based on the ERGEG gas consultation paper entitled "Developing a roadmap towards a single competitive European Gas Market".

Plans for the South-East Europe Process involved continued progress on market design and institutional monitoring. The focus will be on harmonisation of the regulatory framework and regulators' powers, as well as the development of a detailed strategy for the gas markets.

Best-practice regulation

CEER will consolidate its information exchange, benchmarking and monitoring activities in 2006.

In 2005 CEER produced its third benchmarking report on the quality of electricity supply. This year the work will be extended to the quality of gas services. Other initiatives include information exchanges on best-practice regulation, incentive-based regulation and methods for efficiency benchmarking of system operators. Coordination of the international cooperation activities of European regulators will be assured by the web-based International Energy Regulation Network (IERN) platform which will enable regulators throughout the world to engage in an online discussion process (as well as attending the biennial Energy World Forum).

E-Control has contributed to the work of all the CEER working groups, and has taken the lead in the Single Energy Market Working Group which is mapping out a strategy for further progress towards creating regional markets.

→ Florence (electricity) and Madrid (gas) Processes

12th Florence Forum

The 12th meeting of the Florence Forum, a platform for the electricity sector (representatives of the European Commission, member states, regulators, industry and various interest groups), took place on 1–2 September 2005. Discussion centred on the creation of a functioning European internal market in energy. Sufficient interconnectors, integrated and reliable transmission systems and compatible wholesale market rules were highlighted as prerequisites of a functioning pan-European market, as were adequate information for all market participants and third-party system access.

ERGEG will be presenting guidelines on transparency and information, based on CEER's work in 2005, at the 13th Florence Forum. The European system operators' and electricity industry stakeholders' associations, ETSO and EURELECTRIC, will investigate the amount of information required by system operators and market participants for electricity trading and investments in the wholesale market. In 2005, small groups known as mini-fora embarked on a discussion process regarding congestion management. In 2006 the seven mini-fora, based on the planned "regions", will continue to work towards market-based capacity allocation procedures and seek to achieve improved coordinated congestion management, especially in the Central Eastern Europe, South Western Europe and Central Western Europe regions.

10th Madrid Forum

The Madrid Process was launched by the European Commission in 1999 to discuss issues relating to the creation of an internal gas market which are not addressed by the Gas Directive. The Forum convenes twice a year and is attended by representatives of regulatory authorities, EU member states, the European Commission, transmission-system operators, gas suppliers and traders, consumers and gas exchanges. Since 2002 the energy ministries and regulators of accession countries have also been present. In the interests of a more intensive dialogue with Russia – the main source of European gas imports – representatives of the Russian gas exporter Gazprom are invited to attend.

The 10th Madrid Forum was held from 15–16 September 2005. Apart from preliminary information from the European Commission on the findings of its benchmarking report and the gas sector inquiry, the main topics were access to storage, balancing and interoperability. ERGEG presented an interim report on implementation of the Guidelines for Good TPA Practice for Storage Operators (GGP-Storage), agreed at the 9th Madrid Forum in December 2004; a final report will be made to the 12th Madrid Forum.

The roadmap towards a single competitive European gas market, drawn up by CEER and presented at the 10th Madrid Forum, analyses the problem areas in the wholesale market and makes recommendations for action. Consultations with European market participants on this document are currently taking place.



→ January

3 Jan. 2005 KELAG separates its distribution-system operation activities from generation and sales to form KELAG Netz GmbH. Re-structuring is necessary to comply with the unbundling provisions of the EU Acceleration Directive.

4 Jan. 2005 By the end of 2004 a total of 781 new renewable generating stations had been approved in Upper Austria.

7 Jan. 2005 Austrian wind farm operators invested around EUR 200m in new turbines in 2004 (a total of 170 MW of capacity).

8 Jan. 2005 The Constitutional Court rejects a petition from the Burgenland provincial government seeking annulment of the 2003 System Charges Order.

14 Jan. 2005 System charges are reduced, but some suppliers simultaneously increase their energy prices by the same amount.

14 Jan. 2005 The EU criticises Austrian energy policy – particularly high gas-system charges. Stronger competition as a result of liberalisation seems to have made little impression on Austrian gas companies.

15 Jan. 2005 EVN purchases 67% stakes in Bulgarian electricity distribution companies Plovdiv and Stara Zagora for a total of EUR 271m.

21 Jan. 2005 Despite calmer oil markets ÖO Ferngas sees no room for gas price reductions.

28 Jan. 2005 Austria records the world's highest growth rate for new renewable generating capacity. By 2007 Austria will already be drawing 7% of its electricity from renewable generating stations, though the statutory target is only 4%.

28 Jan. 2005 TIWAG registers an all-time high for electricity consumption at 898 MWh or 18.2 GWh/day.

→ February

1 Feb. 2005 Electricity system charges on the ultra-high voltage grid are reduced by 9–20% in the Burgenland, Carinthia, Salzburg and Verbund-Austrian Power Grid AG (APG) grid zones.

1 Feb. 2005 According to the Austrian Energy Agency, energy prices rose by an average of 6.4% in 2004. Electricity was 2.7% more expensive and gas 5.5%.

7 Feb. 2005 Vattenfall acquires 35.3% of the largest Danish electricity supplier, Elsam.

9 Feb. 2005 A survey conducted by market research firm Focus finds that only 3% of all Austrians would consider switching electricity suppliers. The greatest willingness to switch was in Vienna and the least in Upper Austria.

10 Feb. 2005 Christoph Leitl, President of the Austrian Federal Chamber of Commerce, again slams excessive electricity system charges in Austria.

11 Feb. 2005 Verbund subsidiary Austrian Power Grid AG (APG) opposes the use of underground cables over part of the 380 kV-route, as it would mean additional costs of EU 386m.

16 Feb. 2005 CO₂ allowances are traded for the first time on the Scandinavian Nordpool electricity exchange in Stockholm; turnover is 45,000 tonnes.

18 Feb. 2005 OMV and Gazprom agree to remove territorial sales restrictions and OMV's pre-emptive right to gas destined for Austria from their supply contracts.

19 Feb. 2005 Energie AG launches a EUR 300m bond issue to finance large projects.

22 Feb. 2005 Italian gas company Eni wants to dispose of subsidiary Snam Rete Gas, in which it owns a 50% stake. This will cut Eni's share of the Italian gas market to a maximum of 15%.

23 Feb. 2005 Verbund-Austrian Hydro Power AG (AHP) will build a new pumped storage station in Kaprun, to be completed by 2011.

24 Feb. 2005 The German Cartel Office plans to place restrictions on long-term gas supply contracts. The authority believes that these contracts are the main reason why there has been little change in the number of suppliers and price competition.

25 Feb. 2005 CO₂ allowance trading cannot be launched before the 1 March 2005. France, Germany and the United Kingdom have also announced delays.

→ March

3 Mar. 2005 According to the interim report on the general investigation of the Austrian electricity market, competition on the electricity market is not functioning properly. This failure is largely attributable to market dominance, re-monopolisation, cross-holdings between electricity suppliers and insufficient unbundling.

3 Mar. 2005 Italian oil and gas group Eni plans to expand the pipeline that brings gas to Italy from Russia via Austria. The company is to invest EUR 300m in the project.

4 Mar. 2005 The Carinthian Chamber of Commerce and best connect electricity pool bring an action against EnergieAllianz in the cartel court.

8 Mar. 2005 Burkhard Hofer succeeds Rudolf Gruber at EVN.

11 Mar. 2005 Austria's provinces are behind schedule on liberalising their electricity markets. Necessary legislative amendments such as changes to unbundling provisions have not yet been carried out.

16 Mar. 2005 The purchase of Romania's Petrom for EUR 1.5bn boosts OMV's share of its Danube basin core market from 14 to 18%.

17 Mar. 2005 The European Commission calls on ten EU member states to implement the liberalisation of their energy markets. They are given a two month deadline.

21 Mar. 2005 Tyrolean gas supplier TIGAS acquires a 6% stake in Bayerngas.

28 Mar. 2005 Following a positive environmental impact assessment the authorities give a green light to the 380 kV-line.

29 Mar. 2005 Erdgas OÖ begins construction of the first Austrian biogas plant to inject processed biogas into the natural-gas grid.

→ April

1 Apr. 2005 Electricity system charges are reduced by 8–10% in Lower Austria, Tyrol, Vienna and Vorarlberg.

1 Apr. 2005 Vorarlberger Kraftwerke AG (VKW) increases electricity prices for domestic and business consumers by an average of 1.5%.

1 Apr. 2005 The European Energy Exchange (EEX) in Leipzig offers members electricity deliveries into and out of Austria.

2 Apr. 2005 EVN increases its holding in Rohöl-Aufsuchungs AG (RAG) from 30% to 37.5%. The provincial utility holds a majority 50.5% interest in RAG-Beteiligungs-AG, which in turn has a 75% stake in RAG.

12 Apr. 2005 Work starts on Austria's largest biomass power plant, in Simmering, Vienna. Rated capacity is some 62 MW.

→ May

9 May 2005 The need for additional generating capacity in Austria over the next few years is put at around 3,000 MW.

10 May 2005 EVN, Wienstrom, Linzstrom and BEWAG acquire 10.08% stakes in Vienna-based settlement agency APCS Power Cleaning and Settlement AG.

18 May 2005 Since liberalisation some 21,000 or 2.6% of Austria's 800,000 households have switched to a cheaper gas supplier.

18 May 2005 OMV concludes a transport agreement with Russian Gazprom for the delivery of 4.4bn cu m/year of Russian natural gas to Europe until 2027.

→ June

1 Jun. 2005 Electricity system charges in Styria and Upper Austria are reduced by 10–15%.

13 Jun. 2005 The European Commission drops longstanding investigations into allegedly anti-competitive supply contracts concluded by the Russian Gazprom group.

14 Jun. 2005 The European Commission launches electricity and gas sector inquiries due to the absence of effective cross-border competition and the lower prices that this would bring. The Commission suspects that entry barriers are excluding new suppliers from national markets.

18 Jun. 2005 Italian gas company Eni and OMV plan to expand the Trans-Austria-Gasleitung (TAG) to enable an extra 3.2bn cu m/year to be pumped through the pipeline by 2008.

27 Jun. 2005 Leo Windtner takes over as the president of the Verband der Elektrizitätsunternehmen Österreichs ([VEÖ] Austrian Association of Electricity Companies). The Energie AG boss succeeds Michael Pistauer. TIWAG boss Bruno Wallnöfer is elected as vice-president.

30 Jun. 2005 CO₂ allowance trading begins on Austria's EXAA power exchange.

→ July

1 Jul. 2005 Verbund-APG enters the retail market and for the first time offers electricity to households and small businesses nationwide.

5 Jul. 2005 Electricity supply reliability in Austria was at 99.9% in 2004; non-availability due to power outages was 30.33 minutes.

6 Jul. 2005 The European Commission initiates proceedings in the European Court of Justice (ECJ) against Estonia, Greece, Ireland, Luxembourg and Spain due to their failure to open their national energy markets.

13 Jul. 2005 TIWAG buys into cut-price gas and electricity provider MyElectric. Salzburg AG, previously the sole owner of MyElectric, sells a 50% stake to the Tyrolean company.

14 Jul. 2005 E-Control and VEÖ agree upon an incentive regulation system for the determination of electricity system charges.

16 Jul. 2005 The planned reduction in system charges will not be sufficient to outweigh price increases. Upper Austrian gas suppliers plan to increase their prices by around 10% in September 2005.

21 Jul. 2005 TIGAS sells 60% of Energas-Südgas to Sel AG and increases its holding in Selgas by 40%.

27 Jul. 2005 Upper Austria's Energie AG is to form an independent system operator on 1 October 2005.

→ August

- 12 Aug. 2005** The extension of the deadline for financial support for renewable generating stations is now definite. An amended Ministry of Economic Affairs and Labour order extends the deadline for commissioning green power plants approved before the end of 2004 from 30 June 2006 to 31 December 2007.
- 17 Aug. 2005** The Tyrolean provincial government decides to carry out a feasibility study on four power stations.
- 18 Aug. 2005** The German Cartel Office is to investigate large German electricity groups.
- 26 Aug. 2005** Verbund boss Haider announces that the company has notified the competition authority of its intention to repurchase former sales subsidiary APC (wholesale business).
- 27 Aug. 2005** EVN becomes the sole owner of the former power station in Zwentendorf.
- 31 Aug. 2005** The EUR 24.6m Nussdorf hydro power station in Vienna is inaugurated. It is jointly owned by Wienstrom, EVN and Verbund.

→ September

- 2 Sep. 2005** Veit Sorger, President of the Industriellenvereinigung (Federation of Austrian Industry) calls for the complete privatisation of the provincial energy utilities.
- 6 Sep. 2005** The Dutch government submits a draft bill on partial privatisation of the electricity industry.
- 8 Sep. 2005** The European Commission criticises the recent wave of mergers in the energy sector and states its intention to watch developments closely.

12 Sep. 2005 According to the International Atomic Energy Agency (IAEA) there are currently 441 nuclear power stations in operation around the world and a further 22 under construction.

14 Sep. 2005 Plans for the 380 kV Salzburg power line are available for public inspection and comment.

15 Sep. 2005 Energie AG plans to invest some EUR 600m in new generating stations up to 2015.

19 Sep. 2005 Carinthian electricity demand is growing by 2.7% per year.

19 Sep. 2005 Growing numbers of German gas customers (some 500,000 so far) are taking legal action against energy suppliers over price increases. So far no court has ruled against consumers.

26 Sep. 2005 The German Federal Network Agency calls for a reduction in system charges. It says there is a lack of transparency which makes price comparisons difficult. The regulation of system access, previously negotiated, will now be regulated by the state.

27 Sep. 2005 OMV creates a new sub-holding company, OMV Gas International, to manage its gas activities. The new sub-group comprises: OMV Gas GmbH, which is responsible for transport, storage and trading; OMV's 20% stake in Nabucco International; its interest in business-to-business retailer EconGas and the gas division of the Romanian Petrom group.

28 Sep. 2005 The Federal Competition Authority approves TIWAG's acquisition of a 50% stake in MyElectric.

30 Sep. 2005 Switzerland will seek a bilateral agreement with the EU on electricity, to regulate transit, reciprocal market access and the renewable electricity certification.

→ October

1 Oct. 2005 Some suppliers put up gas prices. BEGAS increases its overall prices by about 6.5%, and TIGAS customers must pay 10% more. Lower Austria's EVN raises its net energy prices by 25%.

8 Oct. 2005 The German Cartel Office is to investigate long-term agreements between gas companies and municipal utilities. Ulf Böge, President of the Cartel Office sees 25-year terms as anti-competitive.

13 Oct. 2005 EnBW ups its holding in EVN from 13.2% to 30%.

29 Oct. 2005 Injecting biogas into the gas grid would place a heavy burden on taxpayers, according to two studies commissioned by E-Control. It is unclear how it can be funded and the technology is not yet mature. It is unlikely to be commercialised for the next ten to 15 years.

→ November

1 Nov. 2005 System charges are reduced by about 10%. The largest reductions are in Vorarlberg (14%) and Upper Austria (13.2%), and the smallest drop in Vienna (6.9%), while system charges in Tyrol are unchanged.

1 Nov. 2005 The ESTAG energy group raises its gas prices by 5%. Klleag's prices go up by 10%, while the Klagenfurt municipal utility cuts overall prices by 4%.

3 Nov. 2005 Having hiked its gas prices on 1 October 2005, BEGAS announces a further 9% increase on 1 January 2006.

4 Nov. 2005 Salzburg AG and TIWAG will each found their own system operation subsidiaries on 1 January 2006.

5 Nov. 2005 The competition authorities clear Verbund's repurchase of APC from Slovenia's Istrabenz.

7 Nov. 2005 German market leader E.ON discloses its method for calculating gas prices for private consumers in the hope of creating increased transparency and dispelling doubts about the reasonableness of gas prices.

8 Nov. 2005 According to the IAEA, global energy demand will grow by more than 50% by 2030.

11 Nov. 2005 Italian premier Silvio Berlusconi calls for the construction of new nuclear power stations in Europe.

12 Nov. 2005 Industrial electricity prices have risen by 25% year on year.

12 Nov. 2005 Bewag forms Bewag Netz GesmbH. The new subsidiary will be responsible for transmission-line construction and maintenance.

14 Nov. 2005 Green Party congress unanimously adopts a motion for a new energy policy. The goal is to reduce total domestic energy demand by 20% by 2020.

15 Nov. 2005 Vorarlberger Kraftwerke AG (VKW) announces that it is dropping its differential between summer and winter electricity prices for domestic and business consumers on 1 January 2006.

16 Nov. 2005 The European Commission presents its report on progress in creating the internal gas and electricity market and the preliminary findings of the sector inquiry. The reports criticise obstacles to competition including high levels of market concentration, vertical integration, insufficient market integration, transparency and unbundling. The final results of the inquiry are to be announced in the second half of 2006.

19 Nov. 2005 There are gas supply problems in southern Austria. New large consumers like Klagenfurt's provincial government headquarters cannot be connected to the grid.

21 Nov. 2005 A new attempt is being made to implement the "Austrian electricity solution." Verbund is to gain an additional 24% share of the sales companies' domestic customer business.

21 Nov. 2005 Electricité de France (EdF) is listed on the Paris stock exchange. Partial privatisation is set to bring the French government some EUR 7bn.

21 Nov. 2005 Prices reach record highs on the Leipzig electricity exchange. One-year contracts for 2006 are traded at EUR 47.5/MWh, and contracts for December 2005 and January 2006 delivery are quoted at up to EUR 57.

23 Nov. 2005 The Hungarian parliament decides to keep the country's Paks nuclear power station in operation for another 20 years.

24 Nov. 2005 Verbund subsidiary APG warns of a looming crisis due to insufficient power lines and the wide gap between power supply and consumption.

24 Nov. 2005 In line with the unbundling rules, the system operation businesses of Steweg-Steg and ESTAG are to be spun off to form a new company, Stromnetz Steiermark GmbH.

24 Nov. 2005 Wholesale electricity prices on the Graz EXAA climb to EUR 130/MWh. The peak-load contract hits EUR 186/MWh.

26 Nov. 2005 In the parliamentary economics committee, the government and the SPÖ (Social Democratic Party of Austria) reach agreement on a new renewable electricity support payment system.

26 Nov. 2005 Record levels of electricity demand are recorded in Carinthia. On 24 November, KELAG customers consumed a total of 712 MW.

26 Nov. 2005 Europe's largest gas exporter Gazprom plans to raise prices for Ukraine from \$50 to \$150 per thousand cu m.

28 Nov. 2005 The Green Electricity (Amendment) Act is intended to trigger investments of up to EUR 3.5bn and create 5,000 new jobs.

→ December

1 Dec. 2005 Compliance with the EU Water Framework Directive could cost the Austrian electricity industry up to EUR 234m. Draft federal legislation should be ready by 2008, and a "good status" for all waters must be achieved by 2015.

2 Dec. 2005 Austrian Minister of Economic Affairs Martin Bartenstein wants to prevent electricity companies from adding the cost of CO₂ allowances to electricity prices. In Austria alone, E-Control estimates potential windfall profits at EUR 120m.

2 Dec. 2005 The German Federal Network Agency approves system charges for the first time. Charges for companies with particularly high consumption are 50–65% lower.

3 Dec. 2005 Since its entry to the retail market on 1 July 2005, Verbund has acquired 12,000 customers. It is targeting a 10% market share by 2010, equal to sales of 5 TWh of electricity.

4 Dec. 2005 KELAG is to raise electricity prices for domestic and small-business customers by 3.9% on 1 January 2006, while lowering system charges by 1.5%.

6 Dec. 2005 Linz AG has opened Austria's largest municipal biomass power station in Linz.

7 Dec. 2005 Verbundgesellschaft acquires 49% of Klagenfurter Stadtwerke's energy business. The electricity, gas and district heating operations are spun off to form Energie Klagenfurt GmbH.

8 Dec. 2005 In future, German electricity suppliers will inform their customers of the precise origin and composition of the power they receive (energy mix). This is in compliance with a provision of the Energy Industry Act.

10 Dec. 2005 Klagenfurter Stadtwerke's plans for a new gas-fired power station could be blocked by insufficient pipeline capacity. Possible solutions include more powerful compressors and new pipelines.

13 Dec. 2005 Salzburg AG will increase electricity prices by up to 5% and gas prices by 15% on 1 March 2006.

13 Dec. 2005 According to the E-Control arbitration report the regulator's arbitration panel heard a total of 220 proceedings in 2005. Calls to the energy hotline were up by 170% and the number of online tariff calculations rose to more than 700,000.

14 Dec. 2005 The EU is targeting a 9% cut in energy consumption over the next nine years, i.e. a reduction of 1% per year. The European Parliament has adopted a draft directive that includes this goal.

14 Dec. 2005 VKW registers record daily power consumption of 9.8 GWh, with peak load at an all-time high of 472 MW.

15 Dec. 2005 On 1 January 2006, system charges in Austria will be reduced by an average of 3% under the new System Charges Order.

17 Dec. 2005 TIWAG increases its holding in Innsbrucker Kommunalbetriebe AG (IKB) to 49.99% (50% less one share).

17 Dec. 2005 EnBW boosts its stake in Stadtwerke Düsseldorf by 25% to almost 55%.

20 Dec. 2005 Verbundgesellschaft's supervisory board approves Stadtwerke Klagenfurt's investment in Energie Klagenfurt.

23 Dec. 2005 Russian President Vladimir Putin approves unrestricted trading in the shares of state gas monopoly Gazprom, thus opening the door to foreign investors.

23 Dec. 2005 EVN plans to enter the west Bulgarian gas market. It has acquired gas network and distribution licences for the Zapad region.

24 Dec. 2005 According to German Wind Energy Association estimates, wind farms with a combined capacity of 10,000 MW were built in Germany in 2005, bringing total installed capacity to 58,000 MW.

27 Dec. 2005 In Germany, the SPD rejects calls to extend the remaining operational life of nuclear power stations from 32 to 40 years. Under the current agreement the last plant will be decommissioned in 2021.

28 Dec. 2005 Households in Germany will have to pay 9–10% more for gas from the start of 2006 onwards. Electricity prices will rise by an average of 4–5%.

29 Dec. 2005 Austrian economic affairs minister Martin Bartenstein initiates consultations on a package of security of draft supply legislation amending six existing acts.



→ Orders and notices issued by E-Control and the Energy Control Commission

ELECTRICITY

Orders issued by the Energy Control Commission

System Charges Order 2006 (SNT-VO 2006)

Order of the Energy Control Commission determining the system charges (Z1. K SNT 100/05), published in the official gazette supplement of the Wiener Zeitung on 10 December 2005

Notices issued by E-Control

Approval of the general terms and conditions of a balancing-group coordinator	1
Approval of the general terms and conditions of a balancing-group representative	1
Approvals of the general terms and conditions of green-power balancing-group representatives	2
Balancing-group representatives' licences	5
Other	4

Notices issued by the Energy Control Commission

Approvals of general terms and conditions for access to distribution or transmission systems	2
Arbitration proceedings	9
Other	4

→ **Orders and notices issued by E-Control and the Energy Control Commission**

GAS

Orders issued by E-Control

Gas Statistics Order 2005

Order of Energy Control Ltd concerning the conduct of statistical surveys on gaseous energy forms of all kinds, published in the official gazette supplement of the Wiener Zeitung on 28 April 2005

Orders issued by the Energy Control Commission

Gas System Charges (Amendment) Order 2005 (GSNT-VO-Novelle 2005)

Order of the Energy Control Commission amending the Gas System Charges Order (GSNT-VO 2004) (ZI. K SNT G 001-043/04), published in the official gazette supplement of the Wiener Zeitung on 29 October 2005

Control Area Managers (Amendment) Order 2005

Order of the Energy Control Commission amending the order of the Energy Control Commission concerning the control-area managers' charges (Nos. K SNT G 003/04, I34/04, I36/04), published in the official gazette supplement of the Wiener Zeitung on 29 October 2005

Order of the Energy Control Commission

Order of the Energy Control Commission concerning the amendment of schedule 3 of the Natural Gas Act (ZI. K FLA G 01/05), published in the official gazette supplement of the Wiener Zeitung on 29 October 2005

Notices issued by E-Control

Balancing-group representative's licence	1
Other	2

Notices issued by the Energy Control Commission

Approvals of the general terms and conditions of distribution system operators	21
Approval of a control-area manager's long-term plan	1
System operation licence	1
Other	4



	Page		Page
Chart 1: Prices charged to medium-sized enterprises (Grid Level 6), by grid areas	18	Chart 29: Percentage contributions to annual electricity output in Austria in 2003, by maximum electricity capacity	64
Chart 2: Prices charged to industrial consumers (Grid Level 5), by grid areas	19	Chart 30: Energy demand scenarios	66
Chart 3: Linear relationship between the cost factor & the efficiency score	29	Chart 31: Natural-gas demand, domestic-gas consumption and rates of change, 1971–2005	70
Chart 4: Benchmarking methods	32	Chart 32: Comparison of Austrian gas-import prices (cent/kWh) with those of oil products (€/t) since 1997	71
Chart 5: Relationship between the model network and benchmarking analysis	35	Chart 33: Overall gas prices paid by typical tariff consumers annual demand of 15,000 kWh, by grid areas	72
Chart 6: Efficiency scores, 2005	36	Chart 34: Gas CPI (Oct. 2002 = 100)	73
Chart 7: Evolution of energy demand – Domestic electricity consumption and rates of change since 1971	38	Chart 35: Breakdown of the gas price paid by an average household (15,000 kWh/year) in November 2004 and November 2005, example of the provincial utility in Lower Austria	74
Chart 8: Injection tariffs under the Injection Tariff Order	41	Chart 36: Household with an annual demand of 15,000 kWh at Grid Level 3	77
Chart 9: Supported renewable electricity contribution as compared to Green Electricity Act targets	42	Chart 37: Industrial consumer with an annual demand of 90,000,000 kWh and an installed capacity of 8,000 kW at Grid Level 2	78
Chart 10: Contribution of supported “other” green power 2005–2021	43	Chart 38: Transit pipelines in Austria	79
Chart 11: (Base) spot-price movements on the EEX	44	Chart 39: Physical balancing-energy purchase and sales volumes trends from October 2002 to December 2005	84
Chart 12: Futures price trends on the EEX (Futures EEX Base year ahead)	44	Chart 40: Balancing-energy price trends between October 2002 and December 2005	85
Chart 13: Industrial electricity-price trends: < 4,500 full-load hours	45	Chart 41: Theoretical biogas potential in Austria, by province	93
Chart 14: Industrial electricity-price trends: > 4,500 full-load hours	45	Table 1: Cost of support payments for “other” green power and small hydro power	41
Chart 15: Electricity CPI, 1999–2005 (1999 = 100)	46	Table 2: Comparison of accredited renewable generating stations and stations under contract to green-power balancing-group representatives	42
Chart 16: Domestic electricity prices incl. taxes & levies, by grid areas (cheapest supplier, 3,500 kWh/year)	46	Table 3: Tariff adjustments by grid zones	51
Chart 17: Use of system and system-loss charges – Grid Level 3	48	Table 4: Green-power withdrawals and compensation payments in 2004 and 2005	58
Chart 18: Use of system and system-loss charges – Grid Level 4	48	Table 5: Comparison of the “Austrian power mix” 2004 with production statistics	61
Chart 19: Use of system and system-loss charges – Grid Level 5	49	Table 6: Overview of power labelling disclosures by the provincial utilities in 2004	61
Chart 20: Use of system and system-loss charges – Grid Level 6	49	Table 7: Amounts collected and disbursed under the Stranded Costs (Amendment) Order	68
Chart 21: Use of system and system-loss charges – Grid Level 7 (interval metered)	50	Table 8: Results of the 2004 and 2005 industrial price surveys	75
Chart 22: Use of system and system-loss charges – Grid Level 7 (non interval metered)	50	Table 9: Austrian transit companies’ compliance with the GGP2	80
Chart 23: Use of system and system-loss charges – Grid Level 7 (interruptible)	51	Table 10: Austrian storage operators’ implementation of the Guidelines for Good TPA Practice for Storage Systems Operators (GGPSSO)	88, 89
Chart 24: Annual “unplanned” non-availability of electricity supply in European countries	56		
Chart 25: Annual “unplanned” non-availability of electricity supply in Austria in 2002–2004	57		
Chart 26: CHP support scheme	59		
Chart 27: Issuing of certificates of origin via the certificate database	62		
Chart 28: Centralised versus decentralised generation	63		

